

prestige

Solo 18 - 32 MkIII

Excellence 18 - 32 MkIII

ENGLISH

**INSTALLATION,
OPERATING AND
SERVICING
INSTRUCTIONS**



excellence in hot water



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IMPORTANT NOTES

WHO SHOULD READ THESE INSTRUCTIONS

These instructions should be read by:

- the specifying engineer
- the user
- the installer
- the service engineer

SYMBOLS

The following symbols are used in this manual:



Essential instructions for the correct operation of the correct installation.



Essential instructions for the safety of people and the environment.



Electrocution hazard: use a qualified technician.



Burn hazard.

RECOMMENDATIONS



- Please read this manual carefully before installing and commissioning the boiler.
- It is prohibited to modify the interior of the appliance in any way, without the manufacturer's prior written agreement.
- The boiler must be installed by a qualified engineer, in accordance with applicable local standards and local codes in force.
- Failure to follow the instructions describing test operations and procedures could result in personal injury or a risk of environmental pollution.
- In order to ensure the appliance operates safely and correctly, it is important to have it serviced by an approved engineer.
- If there is a problem please contact your installer for advice.
- In spite of the strict quality standards that ACV applies to its appliances during production, inspection and transport, faults may occur. Please immediately notify your approved contractor of any faults. Remember to indicate the fault code as it appears on the screen.
- Defective parts can only be replaced with original factory parts.
- Specific regulation in Belgium. The CO₂, gas flow, air flow and air/gas supply parameters are factory preset and cannot be changed in Belgium



- Before carrying out any work on the boiler, it is important to isolate the electrical supply.
- The user must not attempt to gain access to the components inside the boiler or the control panel.

CERTIFICATION

The apparatus bears the "CE" trademark in accordance with regulations in force in the different countries [92/42/EEC European "Output" Directive and the 2009/142/CE "Gas apparatus" Directive]. This appliance also bears the "HR-TOP" Belgian quality label [gas condensing boiler].



IMPORTANT NOTES

If you smell gas:

- Isolate the gas supply immediately.
- Ventilate the room (Open the windows).
- Do not use electrical appliances and do not operate switches.
- Notify your gas supplier and/or your installer immediately.

This manual forms part of the items delivered with the appliance and must be given to the user to keep in a safe place!

The system must be installed, commissioned, serviced and repaired by an approved installer, in accordance with current standards in force.

The manufacturer declines all liability for any damage caused as a result of incorrect installation or in the event of the use of appliances or accessories that are not specified by the manufacturer.



The manufacturer reserves the right to change the technical characteristics and features of its products without prior notice.



The availability of certain models as well as their accessories may vary according to markets.

TECHNICAL CHARACTERISTICS

The **Prestige** is a wall-hung condensing boiler meeting the requirements of “**HR-Top**” standards in force in Belgium. The boiler is certified in compliance with “**EC**” standards as a room sealed appliance: **C13(x)** - **C33(x)** - **C33s** - **C43(x)** - **C53(x)** - **C63(x)** - **C83(x)** - **C93**, but it can also be connected as an open appliance in category **B23** or as a B23P category appliance operating at positive pressure from the **B23P** category.



Connection type C63 (x) is prohibited in Belgium.

JACKET

The boiler is enclosed in a steel jacket, which has been treated with a degreasing and phosphating process, before being stove enamelled at 220 °C. The inside of this jacket is lined with a layer of thermal and acoustic insulation, which minimizes losses.

HEAT EXCHANGER

The core of the Prestige is a stainless steel heat exchanger which is a result of exhaustive research and intensive laboratory tests. This reflects almost 90 years of experience in the use of stainless steel for heating and hot water generation systems. The specific geometry of the exchanger has been calculated in order to obtain a very large Reynolds number through all of its routes. The Prestige thus achieves an exceptional output remaining stable throughout the boiler's lifespan, given that it does not produce any oxidation on the exchanger, which is manufactured entirely of quality stainless steel.

BURNER

ACV uses its BG 2000-M burner for the Prestige: this is a modulating air/gas premix burner providing safe and quiet operation while limiting pollutant emissions (NOx and CO) to an incredibly low level. Although the ACV BG 2000-M burner is very modern, it uses proven technology and is manufactured using standard spare parts that are easily available on the market.



TEMPERATURE CONTROL

The Prestige MkIII is fitted with a regulator controlled by an “**ESYS**” microprocessor, which handles the safety functions (ignition, flame monitoring, temperature limitation, etc...) and the boiler's temperature control. The **ESYS** also features a weather dependent regulator. Simply connect the outdoor temperature sensor, available as an option.

However, this regulator can also operate with a standard (on/off) room thermostat. The temperature of the system is then dependent on the outside conditions with compensation for the indoor temperature.

Two rotating buttons placed on the control panel are accessible to the user, enabling adjustment of the temperature of the heating and domestic hot water. By entering a specific maintenance code into the unit, qualified installers may access certain parameters, in order to adapt the boiler to specific requirements. In principle, these are factory preset for all normal applications.

DOMESTIC HOT WATER PREPARATION

It is specially designed to operate only as a heating boiler or in combination with the whole range of ACV water tanks. The Smart Line range is the number one choice for domestic or commercial applications.

This Prestige MkIII enables you to choose between two sanitary function methods.

- **Full priority mode:** (factory preset) the boiler cuts the heating circuit each time the domestic circuit requires it.

- **Parallel mode:** (only with a radiator heating circuit) the boiler functions for heating and domestic hot water at the same time.

FROST PROTECTION

The boiler is equipped with integrated frost protection: as soon as the outlet temperature [NTC1 probe] goes below 7 °C, the circulator becomes active.

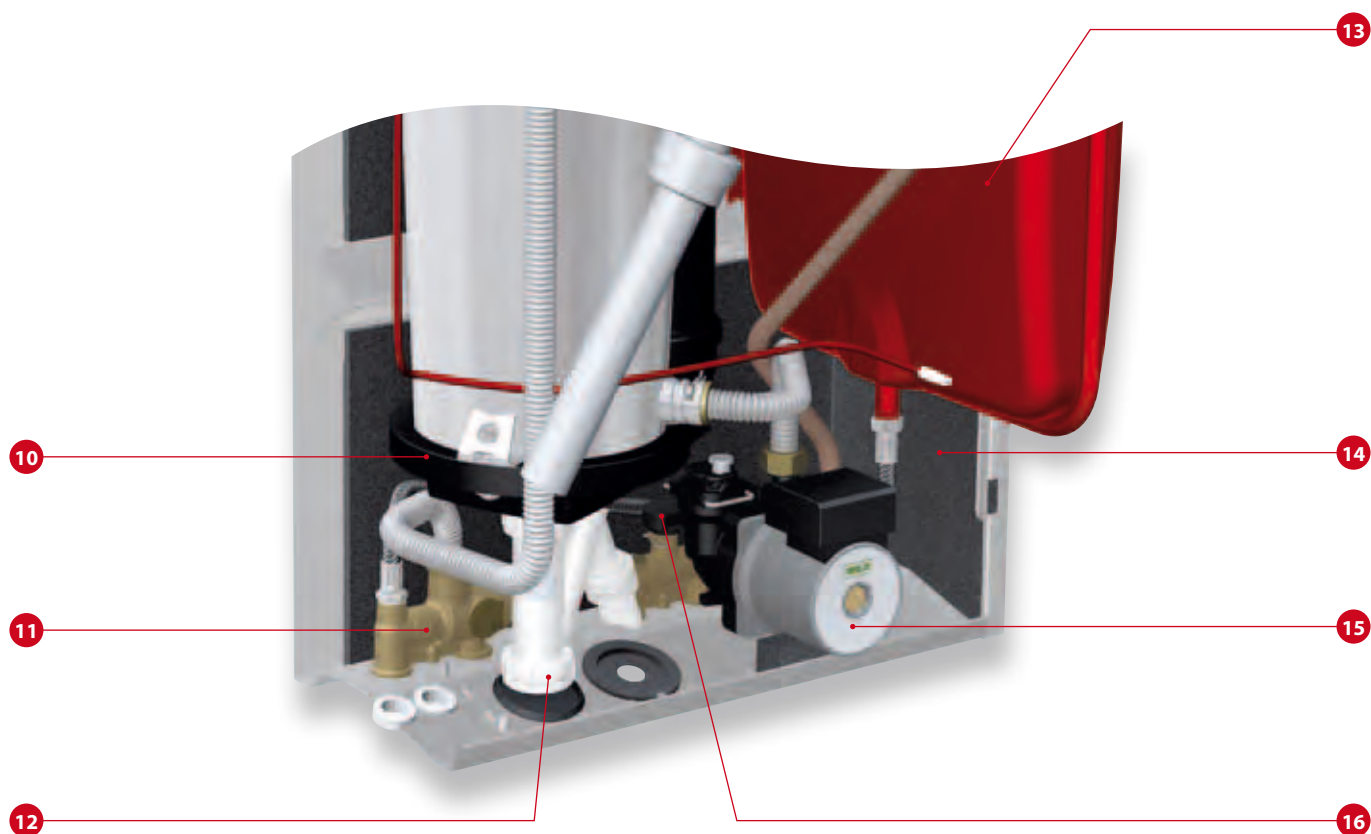
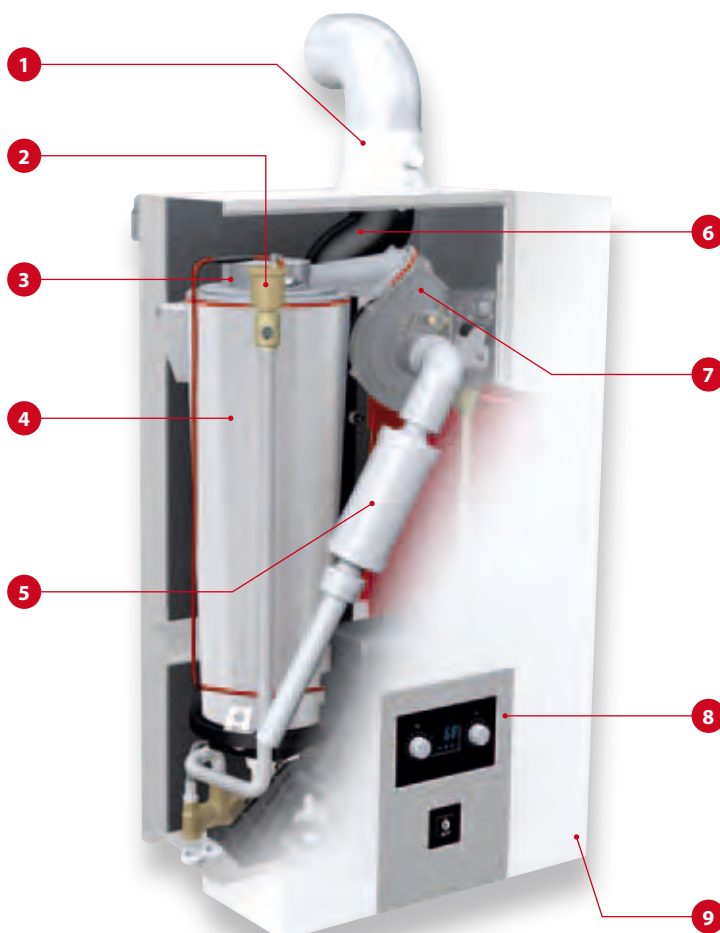
As soon as the outlet temperature is lower than 3 °C, the burner starts up until the outlet temperature exceeds 10 °C and the circulator continues to run for approximately 10 minutes.

If an outdoor temperature probe is connected, the circulator is activated when the outside temperature drops below the preset threshold.

In order to enable the Prestige boiler to protect the whole system against freezing, all the valves of the radiators and the convectors should be completely open.

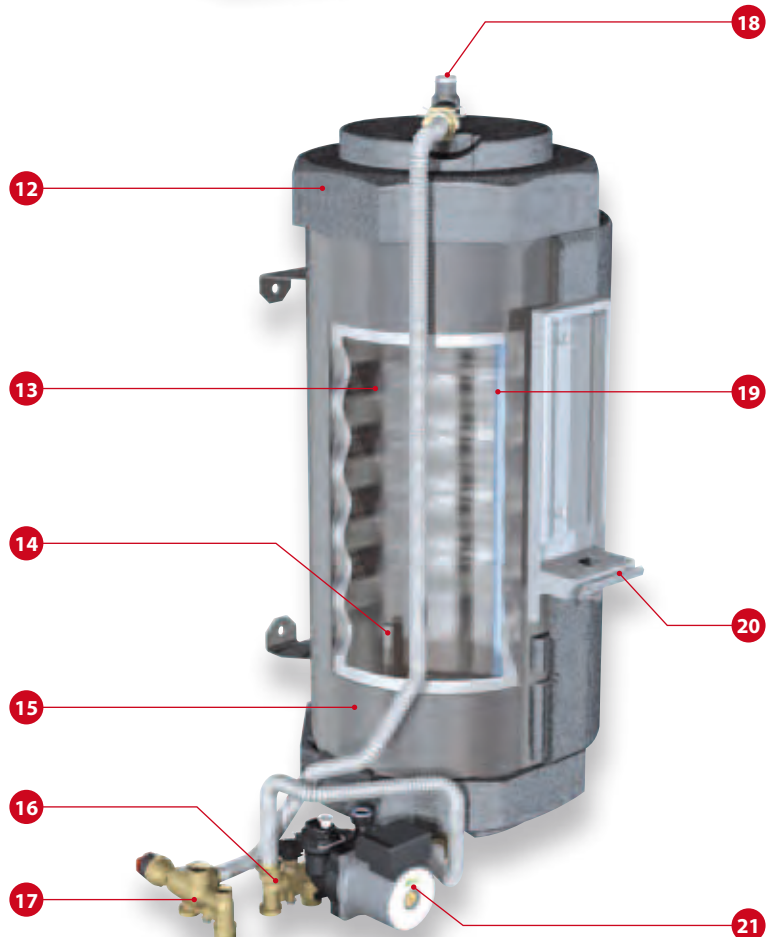
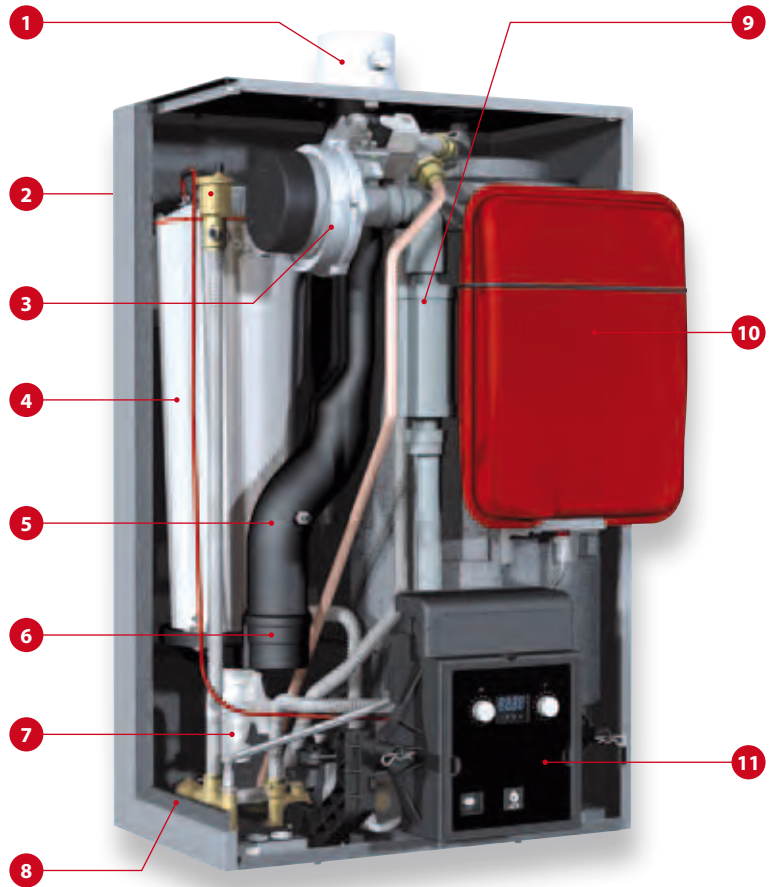
Prestige Solo 18 - 32

1. Concentric chimney connection Ø 60/100 mm with sampling point
2. Automatic air vent valve
3. Burner assembly, burner tube, lighting electrode and flame viewing port
4. Stainless steel heat exchanger
5. Air inlet tube
6. Exhaust tube
7. Fan, gas valve and venturi assembly.
8. Control panel
9. Removable front cover
10. Condensate collector
11. Hydro-Block outlet with *Stepper Motor*
12. Condensate trap
13. 12 litre heating circuit expansion tank
14. Acoustic insulation
15. Circulator with integrated automatic air vent
16. Hydro-Block return with safety valve, pressure sensor and NTC probe



Prestige Excellence 18 - 32

1. Concentric chimney connection Ø 60/100 mm with sampling point
2. Automatic air vent valve
3. Burner unit
4. Stainless steel heat exchanger
5. Exhaust tube
6. Condensate collector
7. Condensate trap
8. Acoustic insulation
9. Air inlet tube
10. 12 litre heating circuit expansion tank
11. Control panel
12. Hot water cylinder insulation
13. 54 litre stainless steel tank for domestic hot water:
14. Stainless steel drywell for domestic sensor:
15. Steel primary cylinder
16. Hydro-Block return with safety valve, pressure sensor and NTC probe
17. Hydro-Block flow with *Stepper Motor*
18. Manual bleed valve
19. PVCC DHW sparge tube
20. Expansion tank support
21. A circulator with integrated automatic air vent



USE OF ESYS REGULATOR

The LCD display illustrated opposite enables visualisation of all of the boiler's functions.

DISPLAY STRUCTURE

The illustration opposite represents all symbols and information that the display can show during its function.

HEATING SYSTEM

The heating system must be kept pressurised [see "COMMISSIONING" chapter – how to determine the operating pressure].

The hydraulic circuit pressure is permanently monitored by a pressure sensor. If the pressure is less than 0.8 bar the display will show "LOP" (Low Pressure) to indicate to you that filling of the hydraulic circuit is necessary.

For more information, please ask your installer when the system is delivered.

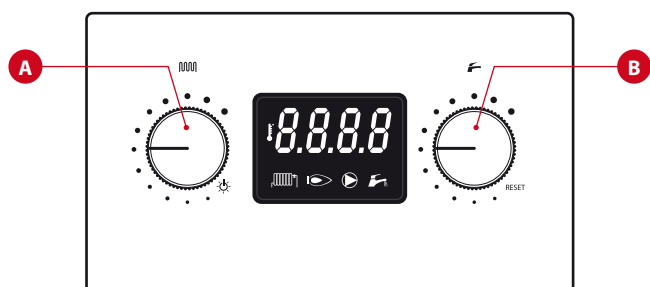


In the case of repeated fills, contact your installer.

ON/OFF switch



Setting the temperatures



A. Setting the heating temperature and Summer/winter function:

Range adjustable from 20 °C to 90 °C:

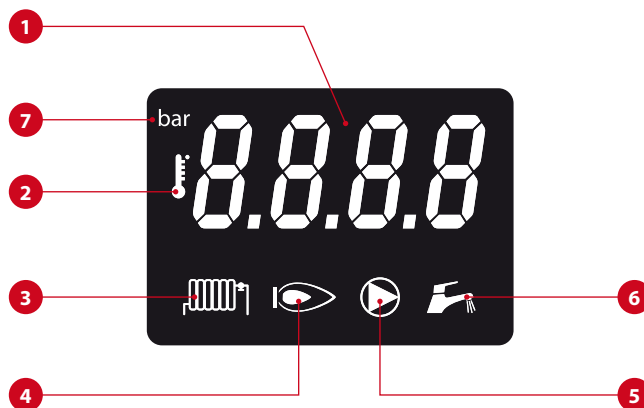
When the thermostat is positioned on ☀, the heating circuit is deactivated and the boiler is then in summer mode.

B. Adjustment of domestic hot water temperature and RESET function:

Setting range is from 20 °C to 80 °C:

To operate the "RESET" function, turn the domestic hot water adjustment button to the left up to minimum, then continue to turn the button lightly and repeatedly for 3 seconds.

LCD Display



1. Numerical field displaying the temperatures
2. Temperature symbol
3. Symbol to select heating mode
4. Symbol indicating that the burner is operating
5. Symbol indicating that the circulator is operating
6. Symbol to select domestic hot water mode
7. Bar symbol

FAULT:

The temperature setting of the appliance and the safety functions of the boiler's various parts are constantly monitored by the "ESYS" system. If a fault occurs, the ESYS turns the unit off and displays an error code: the screen flashes and the first character is an "E" followed by the fault code.[see list of faults]

To reset the unit:

- Execute the "RESET" function by turning the domestic setting button to the left up to minimum, then continue to turn the button lightly and repeatedly for 3 seconds.
- If the fault code appears again, contact your installer.

TECHNICAL CHARACTERISTICS

GENERAL CHARACTERISTICS

		Prestige Solo				Prestige Excellence			
		Natural Gas		Propane		Natural Gas		Propane	
		18	32	18	32	18	32	18	32
Central heating									
Max heat flow [Input] - PCI (low calorific value)	kW	18,0	31,0	18,0	31,0	18,0	31,0	18,0	31,0
Max heat flow [Input] - PCS (high calorific value)	KW	19,9	34,4	19,5	34,8	19,9	34,4	19,5	34,8
Min. heat flow [Input]	kW	2,2	3,8	3	5,2	2,2	3,8	3	5,2
Max. useful power 80/60 °C	kW	17,5	30	17,5	30	17,5	30	17,5	30
Min. useful power 80/60 °C	kW	2,1	3,7	2,9	5,1	2,1	3,7	2,9	5,1
Max. useful power 50/30 °C	kW	19,1	32,6	19,1	32,6	19,1	32,6	19,1	32,6
Efficiency at 100% load 80/60 °C	%	97	96,8	97	96,8	97	96,8	97	96,8
Efficiency at 100% load 50/30 °C	%	106,1	105	106,1	105	106,1	105	106,1	105
Efficiency at 30% load [EN677]	%	108	107,3	108	107,3	108	107,3	108	107,3

Flue gases

CO emissions [max power]	mg/kWh	10	65	3	109	10	65	3	109
NOx emissions [EN483]	mg/kWh	39,9	39,9	51	68	39,9	39,9	51	68
NOx class [EN483]		5	5	5	5	5	5	5	5
Flue gas temperature - Max output power 80/60 °C	°C	62	83	62	83	62	83	62	83
Mass flow rate of combustion products	kg/h	29,56	51,76	29,05	50,89	29,56	51,76	29,05	50,89
Maximum pressure loss for the flue	Pa	130	130	130	130	130	130	130	130
Maximum length of concentric flue pipe Ø 60/100 mm	m	25	12	25	12	25	12	25	12

Gas

Gas flow rate G20 - 20 mbar	m³/h	1,9	3,28			1,9	3,28		
Gas flow rate G25 - 25 mbar	m³/h	2,21	3,81			2,21	3,81		
Gas flow rate G31 - 37 mbar	m³/h			0,74	1,27			0,74	1,27
	g/sec.			0,39	0,67			0,39	0,67
CO ₂ [max output power] (with front panel closed)	% CO₂	8,9	8,9	10,5	10,5	8,9	8,9	10,5	10,5
CO ₂ [max output power] (with front panel open)	% CO₂	8,7	8,7	10,3	10,3	8,7	8,7	10,3	10,3
CO ₂ [min output power] (with front panel closed)	% CO₂	8,6	8,6	10,2	10,2	8,6	8,6	10,2	10,2
Gas connection (male)	Ø	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"

Hydraulic parameters

Maximum operating temperature	°C	90	90	90	90	90	90	90	90
Heating circuit capacity	L	8	8	8	8	16	16	16	16
Capacity of the domestic circuit	L					54	54	54	54
Max operating pressure of the heating circuit	bar	3	3	3	3	3	3	3	3
Heat exchanger pressure drop [ΔT = 20 °C]	mbar	85	260	85	260	85	260	85	260
Heating connection (male)	Ø	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"
Nominal flow	L/h	740	1300	740	1300	740	1300	740	1300

Electrical connection

Class	IP	X4D	X4D	X4D	X4D	X4D	X4D	X4D	X4D
Supply voltage	V/Hz	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50	230 / 50
Maximum absorbed electrical power	W	135	150	135	150	135	150	135	150

Drained weight	kg	46	46	46	46	78	78	78	78
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TECHNICAL CHARACTERISTICS

DOMESTIC HOT WATER PROVISION

Prestige Excellence

SYSTEM OPERATING AT 80 °C

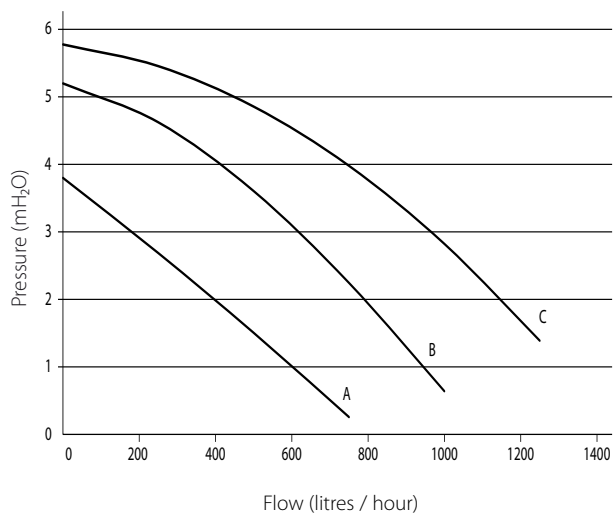
		18	32
Peak flow rate at 40 °C [$\Delta T = 30$ °C]	L/10'	175	224
Peak flow rate at 40 °C [$\Delta T = 30$ °C]	L/60'	583	835
Continuous flow rate at 40 °C [$\Delta T = 30$ °C]	L/hour	490	745
Peak flow rate at 60 °C [$\Delta T = 50$ °C]	L/10'	102	103
Peak flow rate at 60 °C [$\Delta T = 50$ °C]	L/60'	348	353
Continuous flow rate at 60 °C [$\Delta T = 50$ °C]	L/hour	295	320
Reheat time for domestic hot water	Minutes	28	25

GAS CATEGORIES

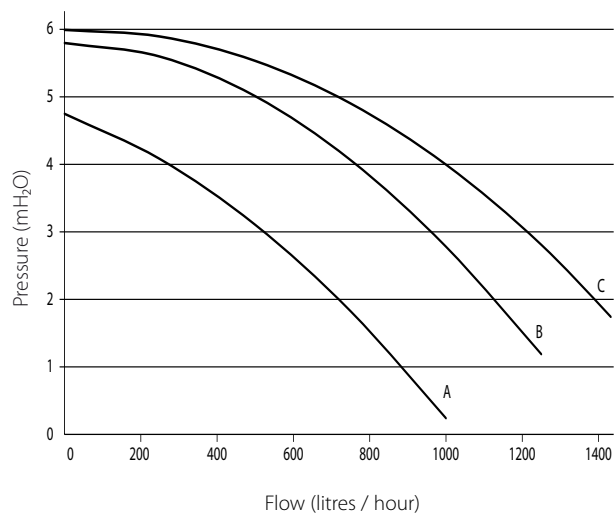
	I2E(S)	I3P	II2H3B/P	II2H3P	II2E3B/P	II2E3P	II2Er3P	II2L3B/P	II2L3P	II2ELL3B/P	II2S3B/P
G20 (mbar)	20		20	20	20	20	20	20	20	20	20
G25 (mbar)	25		25	25	25	25	25	25	25	25	25
G30 (mbar)		37	30 50	37 50	30 50	30	37 50	30	37	30	50
G31 (mbar)		37	30 50	37 50	30 50	30	37 50	30	37	30	50
AT Austria			• •								
BE Belgium	•	•									
CH Switzerland			• •	•							
CY Cyprus			• •								
CZ Czech Republic			• •	•							
DE Germany					•	•				•	
DK Denmark			•								
EE Estonia			•								
ES Spain				• •							
FR France							• •				
GB Great Britain				• •							
GR Greece			•								
HR Croatia			•	•							
HU Hungary			•								•
IE Ireland				•							
IT Italy			•	•							
LT Lithuania			•								
LU Luxembourg					•						
NL Netherlands								•	•		
NO Norway			•								
PL Poland					•	•					
PT Portugal				•							
RO Romania			•		•						
SE Sweden			•								
SI Slovenia			•	•							
SK Slovakia			•	•							
TR Turkey			•								

PUMP PERFORMANCES

4 meter head: Prestige 18



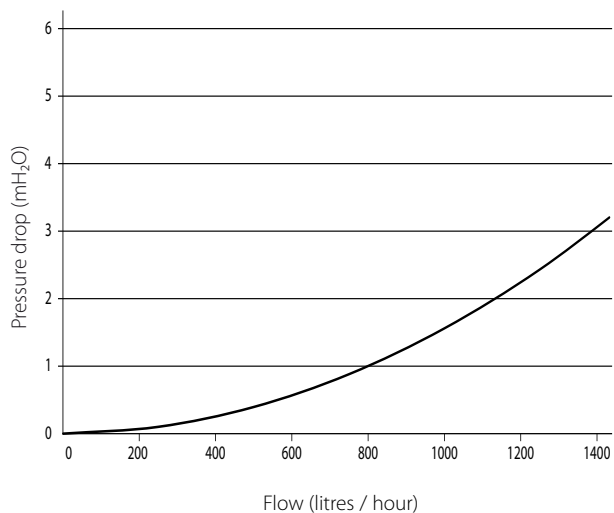
6 meter head: Prestige 32



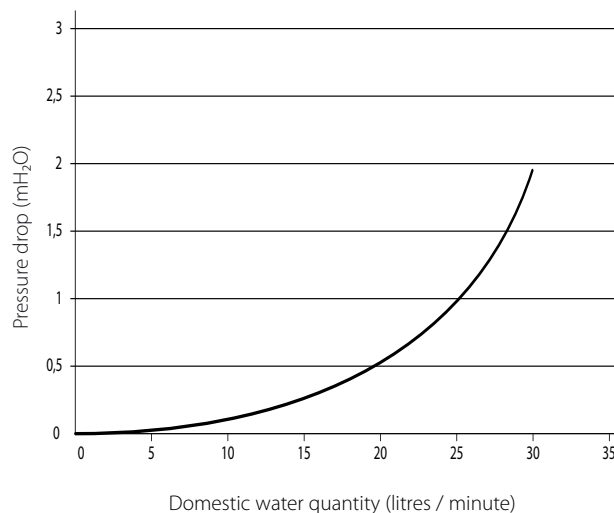
- A = Available pressure (for the heating circuit) circulator on 1
- B = Available pressure (for the heating circuit) circulator on 2
- C = Available pressure (for the heating circuit) circulator on 3

BOILER PRESSURE DROP GRAPH

Heating:
Prestige Solo 18 - 32
Prestige Excellence 18 - 32



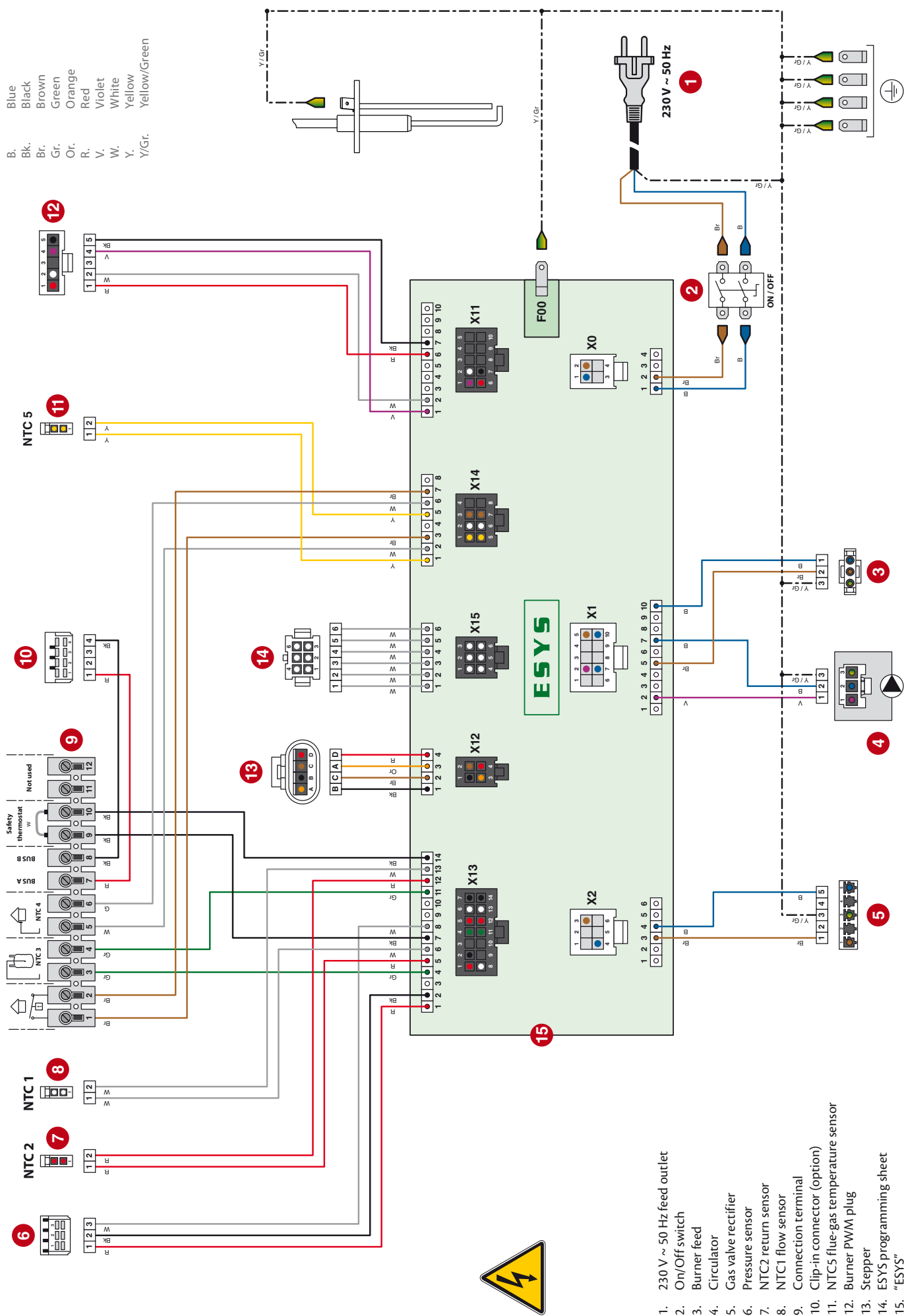
Domestic hot water:
Prestige excellence 18 - 32



ELECTRICAL CONNECTION

Blue
Black
Brown
Green
Orange
Red
Violet
White
Yellow
Yellow/Green

B.
Bk.
Br.
Gr.
Or.
R.
V.
W.
Y.
Y/Gr.



GENERALITY

Filling water contains elements susceptible to damage boilers heat exchangers in case their concentration goes out of an adequate range.

The risk is growing with the size of the installation since the water content per installed kW increases.

PRINCIPLE OF PREVENTION

OXYGEN

Depending of the volume of the installation, a certain amount of oxygen is introduced in the installation. During the exploitation of the installation, some oxygen can be brought in the system in case of water re-filling and/or presence of hydraulic components without oxygen barrier (PE tubes & connectors).

The oxygen reacts with the steel creating corrosion and generating sludges. While the ACV Prestige heat exchanger is made of stainless steel and is by consequent not sensible to corrosion, the sludges generated in carbon steel part of the installation (radiators, ...) will lay down in the hot parts including the heat exchanger.

The sludges in the heat exchanger have the effect to reduce the water flow rate and to thermically insulate the active parts of the heat exchanger, what could lead to damages.

HOW TO PREVENT AGAINST OXYGEN ?

- mechanical system : an air remover combined to a sludges remover installed following the constructors specifications limits efficiently the risk of oxygen in the installation;
- chemical system : additives allow the oxygen to stay in solution in the water. ACV recommends the additives from Fernox (www.fernox.com) and from Sentinel (www.sentinel-solutions.net).
note that these products must be used in strictly accordance with the water treatment manufacturer's instructions.

HARDNESS

Depending of the volume of the installation, the hardness of water and the possible re-filling, a certain amount of lime is introduced in the installation. The lime will lay down in the hot parts, including the heat exchanger creating a reduction of the water flow rate and a thermal insulation of the active parts of the heat exchanger. That phenomena can damage the heat exchanger.

Acceptable hardness range:

mmolCa(HCO ₃) ₂ / l	°DH	°FH
0,5 - 1	2,5 - 5,6	5 - 10

HOW TO PREVENT ?

the filling and re-filling water must be softened if necessary to match the working range. Additives can be used to keep the calc in solution in the water, ACV recommends the additives from Fernox (www.fernox.com) and from Sentinel (www.sentinel-solutions.net).

note that these products must be used in strictly accordance with the water treatment manufacturer's instructions.

The water hardness must be check regularly and recorded in a file.

OTHER PARAMETERS

In addition to the oxygen and the hardness, some other parameters must be controlled in the water of heating installations.

Acidity	6,6 < pH < 8,5
Conductivity	< 400 µS/cm (a 25°C)
Chloride	< 125 mg/l
Iron	< 0,5 mg/l
Cu	< 0,1 mg/l

Those parameters has to be measured and water needs chemical treatment in case of values out of range. ACV recommends the additives from Fernox (www.fernox.com) and from Sentinel (www.sentinel-solutions.net).

Note that these products must be used in strictly accordance with the water treatment manufacturer's instructions.

INSTALLATION CLEANING

Before filling an installation, it must be cleaned following the standard **EN14868**.

Chemical cleaners can be used, ACV recommends the additives from Fernox (www.fernox.com) and from Sentinel (www.sentinel-solutions.net).

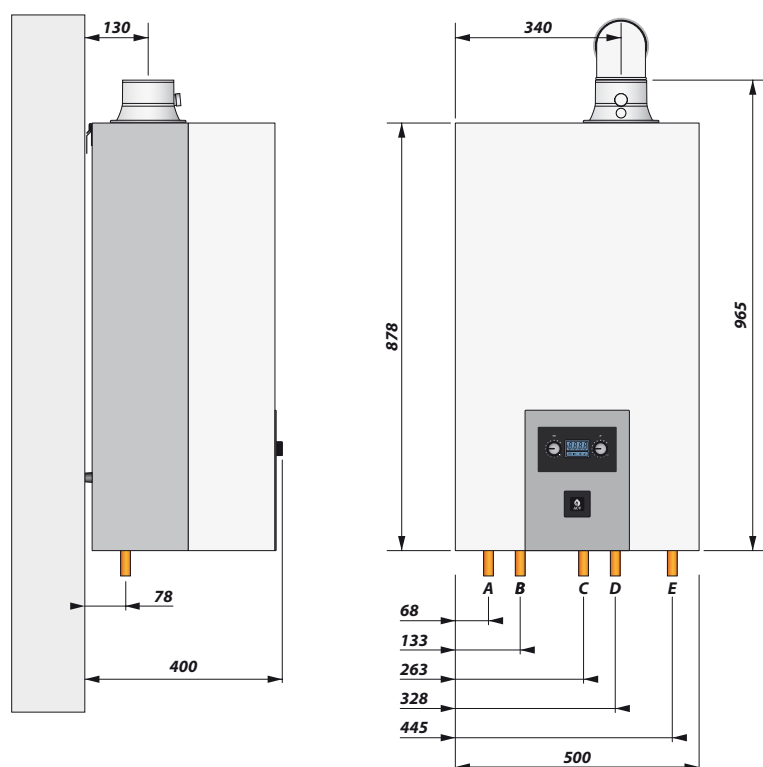
Note that these products must be used in strictly accordance with the water treatment manufacturer's instructions.



In case at least one of those recommendations can not be warranted, the boiler must be hydraulically separated of installation using plate heat exchanger

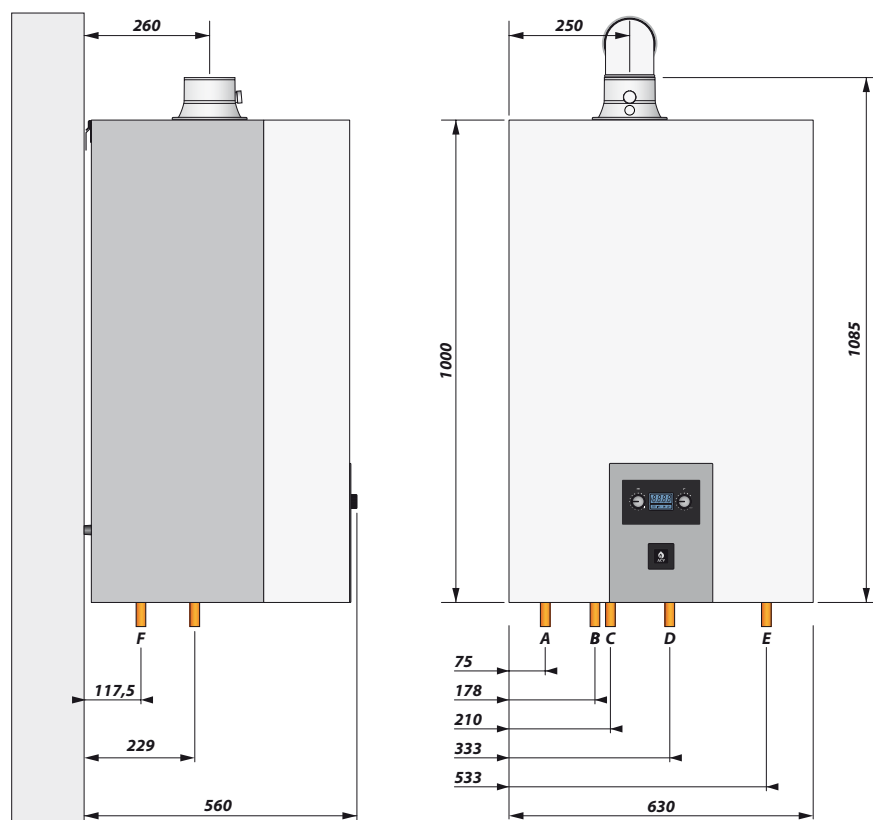
INSTALLATION INSTRUCTIONS

PRESTIGE SOLO 18 - 32 DIMENSIONS



- | | |
|----------|----------------------------------|
| A | Heating outlet Ø 3/4" [M] |
| B | Primary flow to DHW Ø 3/4" [M] |
| C | Primary return to DHW Ø 3/4" [M] |
| D | Heating return Ø 3/4" [M] |
| E | Gas connection Ø 3/4" [M] |

PRESTIGE EXCELLENCE 18 - 32 DIMENSIONS



- | | |
|----------|--|
| A | Heating outlet Ø 3/4" [M] |
| B | Gas connection Ø 3/4" [M] |
| C | Heating return Ø 3/4" [M] |
| D | Cold water inlet connection Ø 3/4" [M] |
| E | DHW outlet connection Ø 3/4" [M] |
| F | Gas connection Ø 3/4" [M] |

INSTALLATION INSTRUCTIONS

INSTALLATION AREA

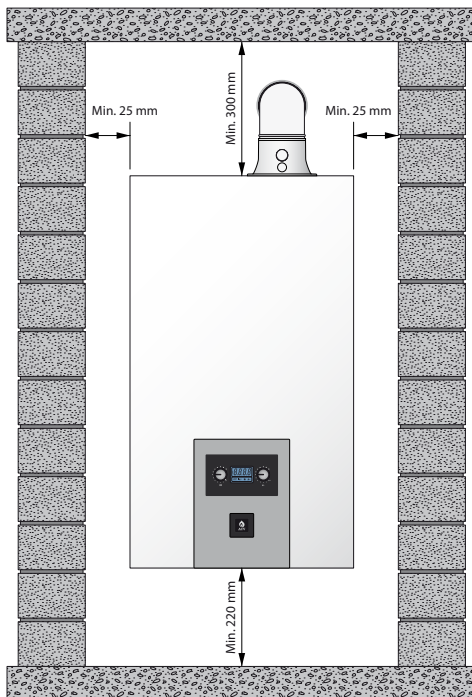
- Make sure that all air vents are unobstructed at all times.
- Do not store any flammable products in the boiler room.
- Do not store any corrosive materials, paint, solvents, salts, chlorine products or any other detergent products in the vicinity of this appliance.
- If you smell gas, do not operate electrical switches, close the gas valve on the meter, ventilate the rooms and contact your installer.
- The area around the boiler must be clean and free from dust.



In case of works (boiler area or near the external air inlet) please switch off the boiler, so as to avoid the accumulation of dust in the combustion system.

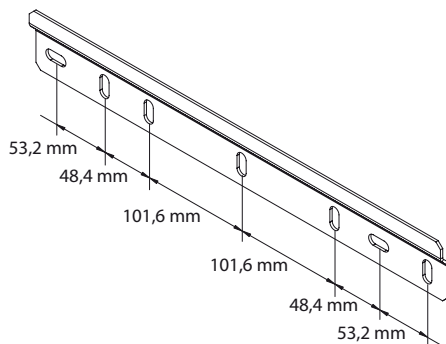
ACCESSIBILITY

The appliance must be placed in such a way that it is always easily accessible. Furthermore, the unit must have the following minimum clearance around it.



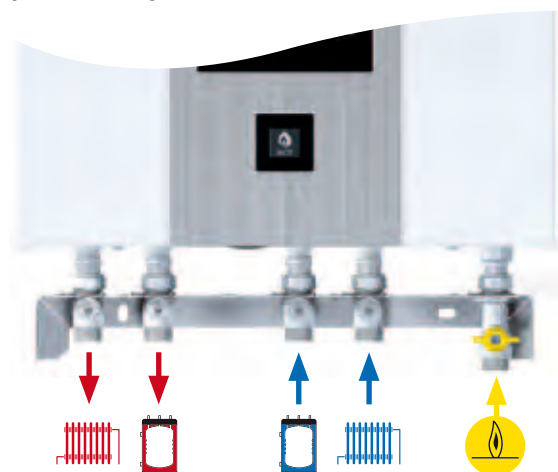
WALL MOUNTING

- The boiler must be mounted on a non-flammable wall.
- Drill two holes with a depth of 75 mm using a 10 mm drill bit, following the spacing given below.
- Fasten the wall mount using the supplied anchor screws.
- Attach the boiler to the wall mount.

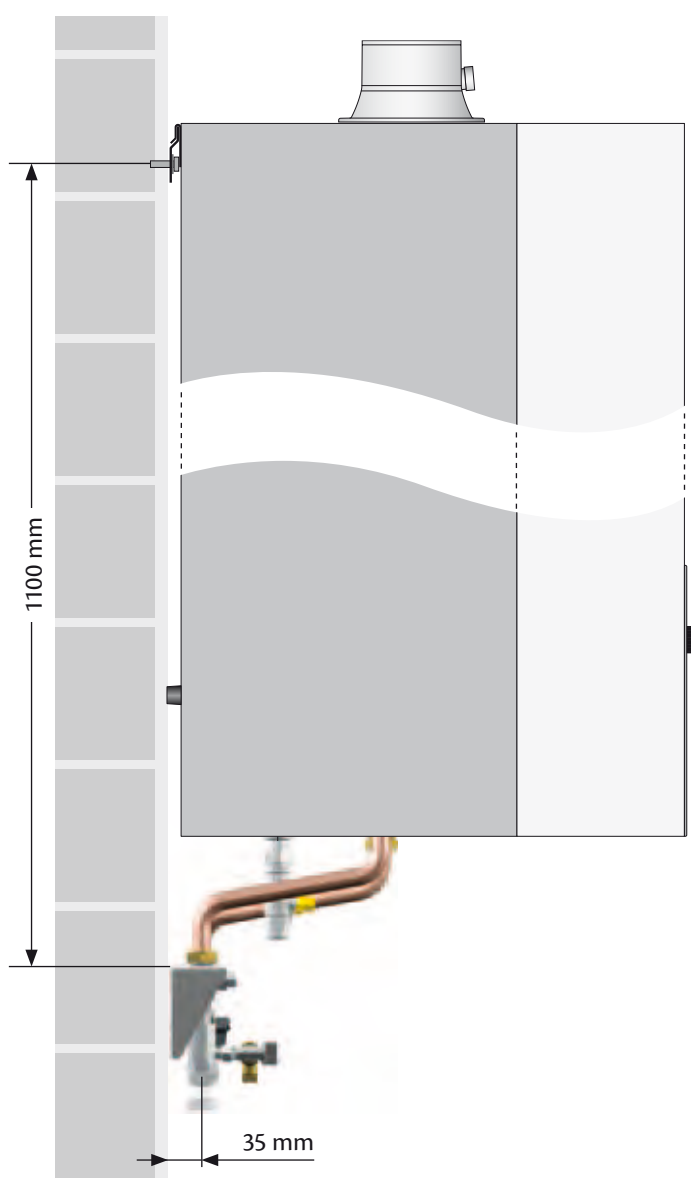
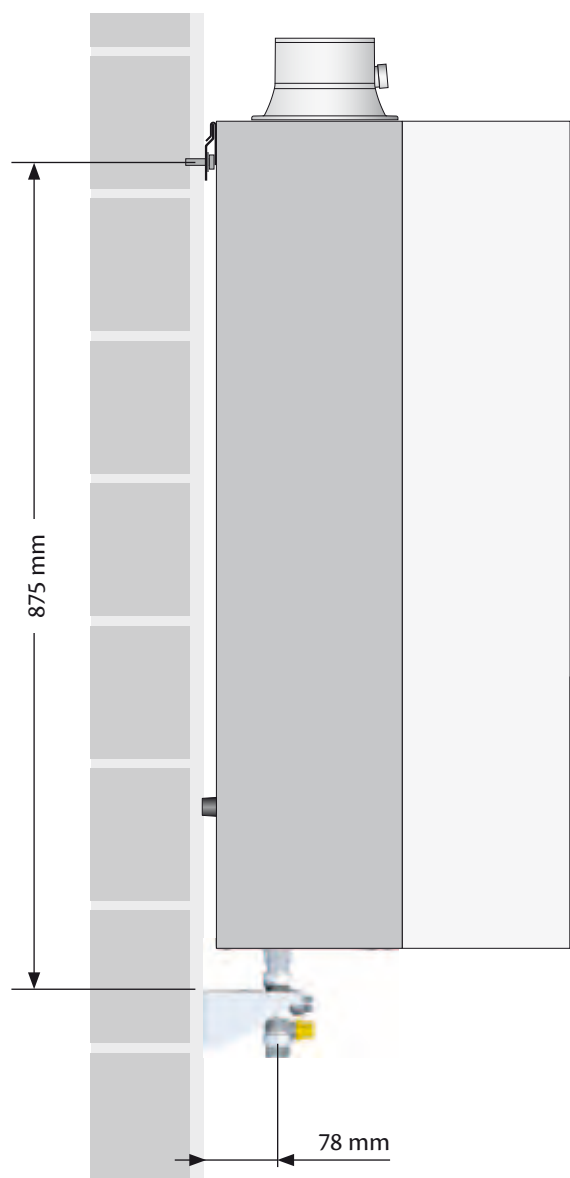
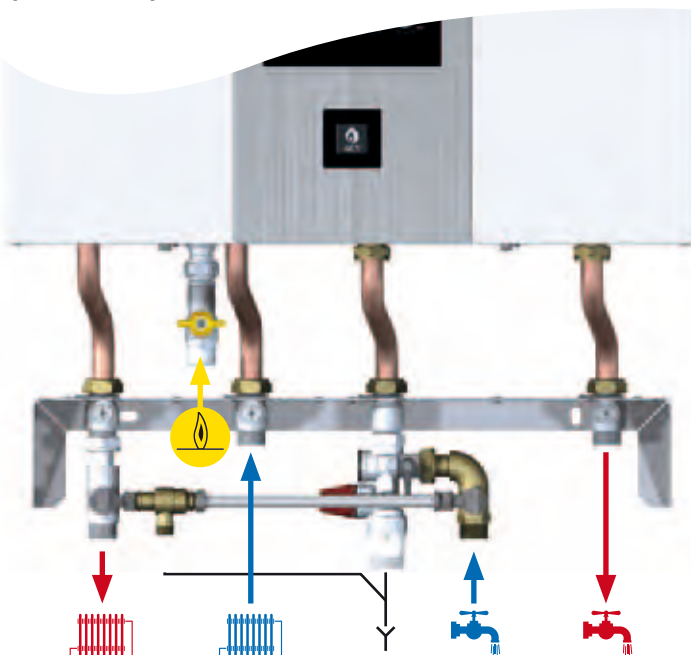


INSTALLATION INSTRUCTIONS

EASY KIT PRESTIGE SOLO 18 - 32 MkIII (10800184)

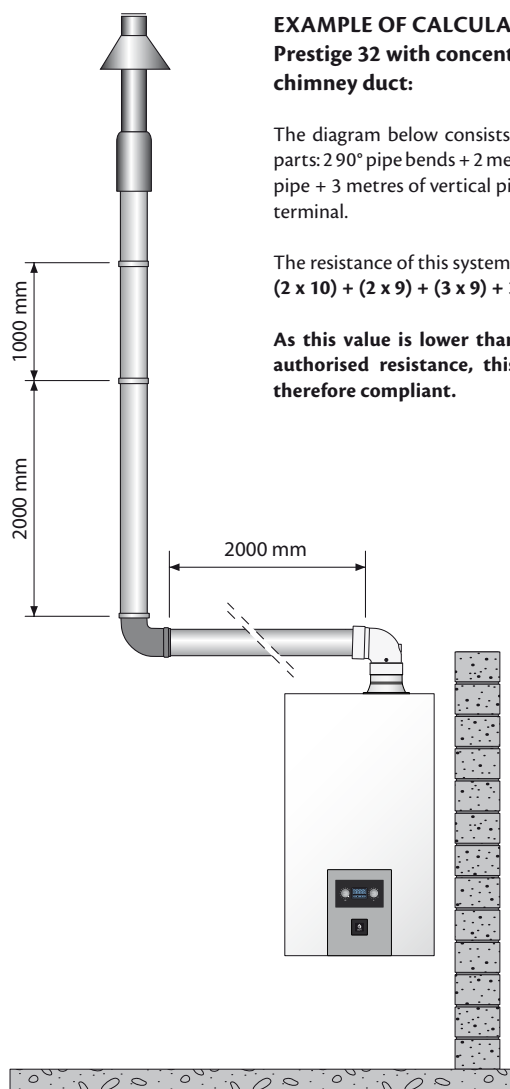


EASY KIT PRESTIGE EXCELLENCE 18 - 32 MkIII (10800185)



FLUE CONNECTION

- The connections must comply with the **NBN D51-003** standard taking into account local energy suppliers' instructions, fire regulations and regulations relating to "pollution".
- Owing to its built-in gas/air ratio regulator, the **Prestige** is, to a large extent, independent of pressure drops in the air intake and flue-gas exhaust systems. However, the maximum pressure drop of this system may not be exceeded; otherwise, the output would diminish. Nevertheless, the gas/air ratio regulator always guarantees optimal combustion with very low emissions.
- The horizontal flue gas exhaust ducts must be installed with a sufficient degree of slope towards the boiler: 3° of slope = 5 mm per metre of duct.
- There must be no obstructions or inlets to other appliances within a radius of 0.5 metres around the Prestige terminal.
- **The maximum pressure drop of the chimney is 130 Pascal.** You can calculate this value using the following table: (please see sample calculation).
- The **C33s** and **C93** configuration enables airtight operation in a pre-existing chimney. The combustion air crosses the space between the tubing and the pre-existing chimney. Make sure to clean the pre-existing chimney thoroughly prior to installation, especially if there is soot or tar residue. Make sure that there is a clearance area for the combustion air at least equivalent to the area that would have been provided by separate concentric ducts or air intake ducts.



EXAMPLE OF CALCULATION Prestige 32 with concentric chimney duct:

The diagram below consists of the following parts: 2 90° pipe bends + 2 metres of horizontal pipe + 3 metres of vertical pipe + one vertical terminal.

The resistance of this system is as follows:
 $(2 \times 10) + (2 \times 9) + (3 \times 9) + 35 = 100 \text{ Pa.}$

As this value is lower than the maximum authorised resistance, this installation is therefore compliant.

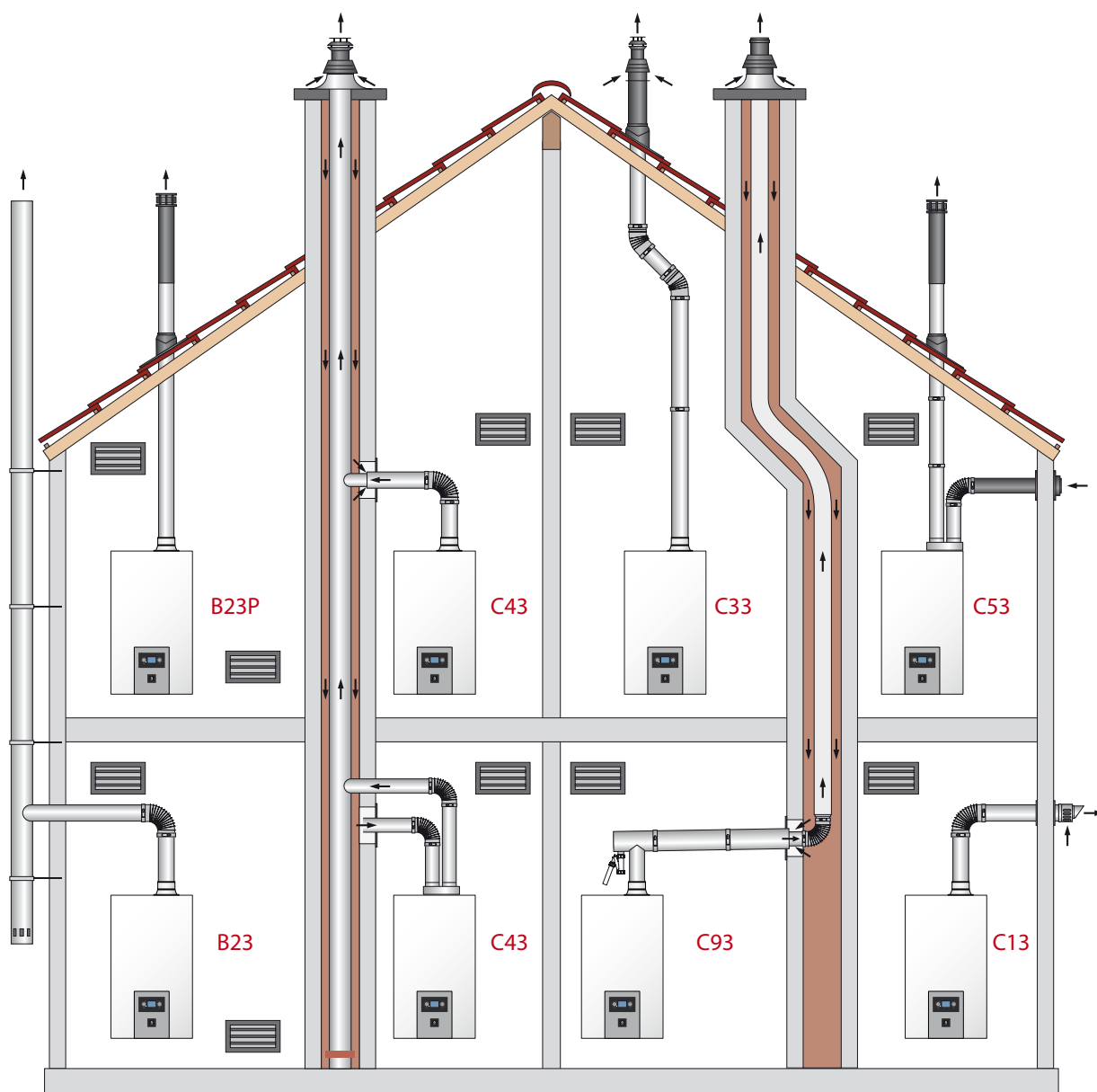
FLUE PRESSURE DROP CHART IN PASCAL (1 Pascal = 0.01 mbar)

Prestige Solo / Excellence 18 - 32

	Concentric chimney duct Ø 60/100 mm		Separate air inlet Ø 80 mm		Separate exhaust Ø 80 mm	
	18	32	18	32	18	32
Straight pipe 1 m	3	9	0.5	1.5	0.7	2.0
90° bend	4	10	0.6	1.9	1.1	3.4
45° bend	3	7	0.4	1.3	0.8	2.3
Vertical terminal	12	35				
Horizontal terminal	9	26				

This table is based on ACV equipment and cannot be applied generally.

Chimney connection options



B23 : Connection to an exhaust duct venting the combustion products outside of the installation area, with the combustion air being drawn directly from this area.

B23P : Connection to an exhaust system of the combustion products designed to operate with positive pressure.

C13 : Connection by pipes with horizontal terminals that simultaneously take in combustion air for the burner and discharge combustion products outside through openings that are either concentric or close enough together to be subjected to similar wind conditions.

C33 : Connection by pipes with vertical terminals that simultaneously take in fresh air for the burner and discharge the combustion products outside through openings that are either concentric or close enough together to be subjected to similar wind conditions.

C93 : Connection with an individual system of which the exhaust duct for the combustion products is installed in an exhaust pipe that is part of the building. The appliance, the exhaust duct and the terminal units are certified as an inextricable assembly.

C43 : Connection by two ducts to a collective duct system serving more than one appliance; this system of collective ducts features two ducts connected to a terminal unit that simultaneously intakes fresh combustion air and discharges the combustion products outside through openings that are either concentric or close enough together to be subjected to similar wind conditions.


C53 : Connection to separate ducts for the supply of combustion air and for venting the combustion products; these ducts may end in zones with different pressure levels.

C63 : Type C boiler which is intended for connection to a room sealed flue system which is approved and sold separately.
(Prohibited in Belgium).

PRESTIGE SOLO + SMART CYLINDER DHW CONNECTION

- Flush the system before connecting the DHW equipment.
- It is essential that the DHW cylinder is filled and pressurised before filling the central heating circuit.

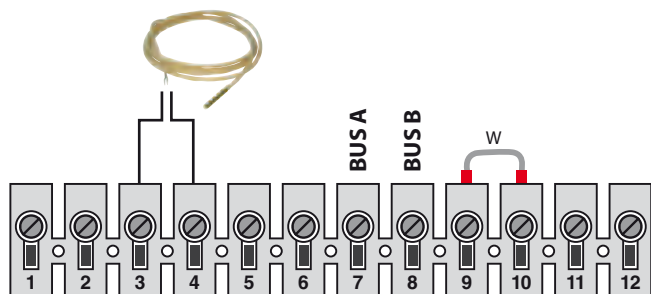
Optional equipment

Code	Description
 5476G003	Sensor NTC 12 kΩ: Monitors the external domestic hot water tank



Before carrying out any work on the boiler, it is important to isolate the electrical supply to the unit.

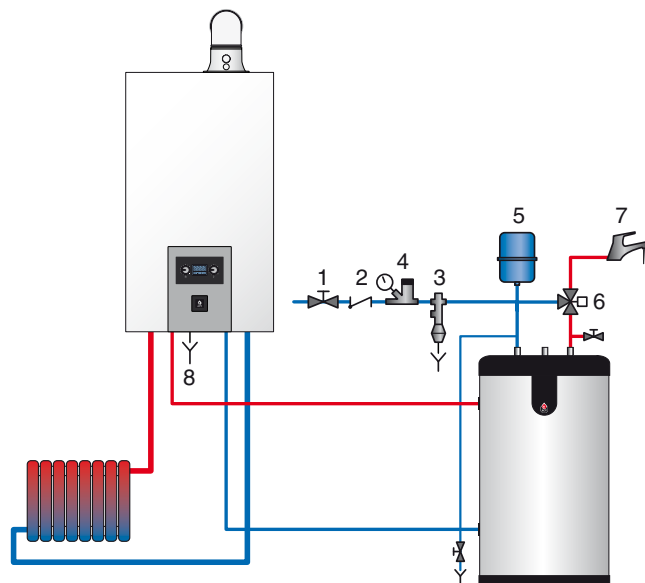
1. The NTC 12k Ω sensor must be placed in the drywell of the cylinder and connected to the boiler connection terminals 3 and 4 [see diagram below].
2. Before starting up the boiler, an "Auto Set" is necessary so that the DHW sensor is detected.
To do this, turn the right button to "RESET" then start the boiler up by pressing on the ON/OFF switch.
From the moment that the display shows "SET" the "RESET" button can be released.



It is possible to use the domestic hot water cylinder thermostat, in place of the NTC 12k Ω sensor.

Activate the "Auto Set" function so that the boiler detects the sensor or the thermostat.

Prestige Solo



1. Domestic cold water isolation valve
2. Non-return valve
3. Safety valve
4. Pressure reducer
5. DHW expansion vessel
6. DHW temperature control valve
7. Hot water tap
8. Condensate recovery trap

Adjustment of domestic hot water production temperature.



Factory Description

P 05

10

T plus = temperature increase of primary flow during domestic hot water mode

P 06

0

0 = domestic hot water priority mode
1 = in parallel

PRESTIGE EXCELLENCE DHW CONNECTION

The **Prestige Excellence** can be connected directly to the DHW circuit.

Flush the system before connecting the DHW.

The system must be equipped with an approved safety unit including a 7 bar safety valve, a non-return valve and an isolation valve. (Temperature and pressure relief valve required in the UK).

When the operating pressure exceeds 6 bar a pressure reducer must be installed before the safety unit.

During the heating process, the domestic water expands and the pressure increases. As soon as the pressure exceeds the safety valve setting, the valve opens and discharges. The use of a DHW expansion tank (minimum 2 litres) will avoid a discharge of water and reduce water hammer.

Vent the cylinder by opening a hot water tap. Warning: the simultaneous evacuation of water and air may cause spluttering.

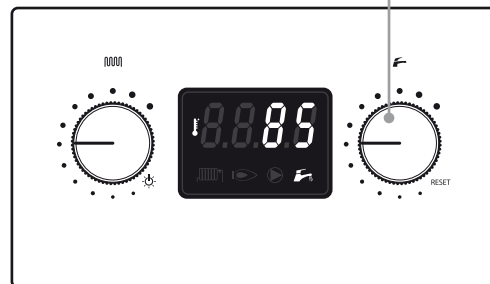


The hot water can reach temperatures greater than 60°C. This can lead to risk of burns. Therefore, the installation of a temperature control valve on the hot flow immediately after the appliance is advised.



The use of stop taps on the DHW system can cause pressure waves on closing. To avoid this use devices to alleviate water hammer.

Adjustment of domestic hot water production temperature.



Factory

Description

P 05

10

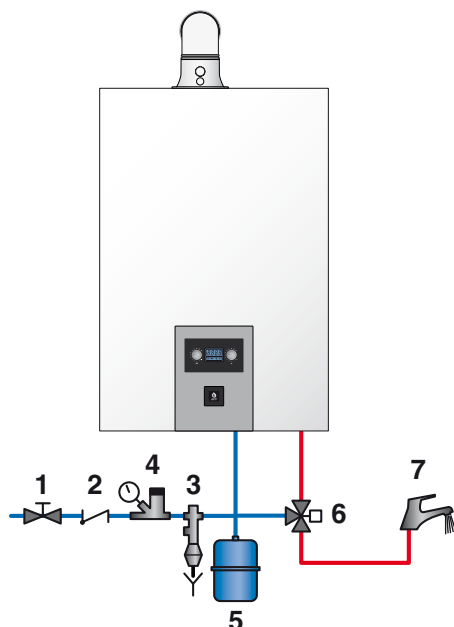
T plus = temperature increase of primary flow during domestic hot water mode

P 06

0

0 = domestic hot water priority mode
1 = in parallel

Prestige Excellence



1. Domestic cold water isolation valve
2. Non-return valve
3. Safety valve
4. Pressure reducer
5. DHW expansion vessel
6. DHW temperature control valve
7. Hot water tap



CENTRAL HEATING CONNECTIONS

RECOMMENDATIONS

- The whole central heating system must be thoroughly flushed with clean water before being connected to the appliance.
- Mount the boiler using the supplied bracket ensuring that it is level or alternatively use the assembly panel available as an option for the **Prestige Solo** model.
- If the boiler is mounted on a wall of lightweight construction it is advisable to use rubber dampers to reduce the transmission and amplification of noise.
- The optional mounting plate for the **Prestige Solo** is equipped with fittings to provide rapid assembly and connection to the central heating and DHW systems. If you do not use the assembly panel, the connections can be carried out using standard straight adaptors.
- The central heating safety valve is integrated and located under the appliance. It must be connected to the drain with an air gap (*allowing an inspection*).
- The central heating pump is incorporated into the appliance and, via the three position switch; its speed can be adapted according to the system requirements.
- The **Prestige Solo** is equipped with a 12 litre integrated expansion tank. Depending on country and associated standards, the **Prestige Excellence** is equipped with a 12 litre expansion tank. This is sufficient for systems containing approximately 120 litres of water for central heating. For systems of a larger capacity, an adapted expansion tank can be added to the **Prestige Solo** and to the **Prestige Excellence**.

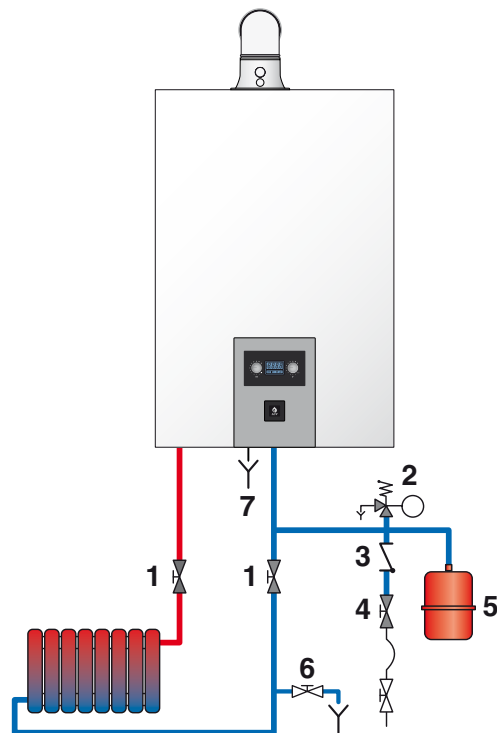
- Fill the system with fresh tap water. Contact your ACV representative or installer about the use of inhibitors.
- **It is possible that the connections are capped due to the presence of residual water from tests carried out on the appliance. Please ensure that all the caps are removed before filling the appliance.**
- The sluice gate connections for filling and/or draining of the appliance are found on the bottom.
- Fill the appliance to a minimum pressure of 1.0 Bar.
- Vent the complete system and refill the system to 1.5 Bar.
- **The heating circuit must be designed so as to ensure a continuous flow around the boiler; if this flow can be interrupted when all the thermostatic valves are closed then a bypass is required to assure a minimum flow of 200 l/h.**
- Ensure that the condensate trap is fitted and connect the hose to the drain using a connection that can be inspected. If necessary fill the trap with clean water. Take the necessary precautions to prevent any risk of the condensate freezing.

HEATING CONNECTION: OVERVIEW

1. Isolating valve in the heating circuit
2. Safety valve calibrated to 3 bar, with pressure gauge
3. Non-return valve
4. System filling unit
5. External expansion tank (if necessary)
6. Drain down valve
7. Condensate trap connection



It is compulsory to install a safety thermostat on the low temperature heating circuit outlet.



GAS CONNECTION

- Our Prestige® boilers are equipped with a Ø 3/4" M connection to connect a gas isolator.
- The gas connections must comply with all applicable standards (in Belgium: NBN D51-003).
- If there is a risk of dirt from the gas network, place a gas filter upstream of the connection.

- Vent the gas pipe and carefully check that there are no leaks on the boiler's internal and external pipes.
- Check the system's gas pressure. Please refer to the technical data chart.
- Check the gas pressure and consumption when commissioning the appliance.

INSTALLATION

INSTALLATION OF A SINGLE HEATING CIRCUIT REGULATED BY AN ACV 22 ROOM THERMOSTAT

SCHEMATIC DIAGRAM

The heating system (radiators or floor) is controlled by an **On/Off** room thermostat.

In this configuration, the boiler constantly adapts its operation to the outdoor temperature, if an outside temperature sensor is connected.

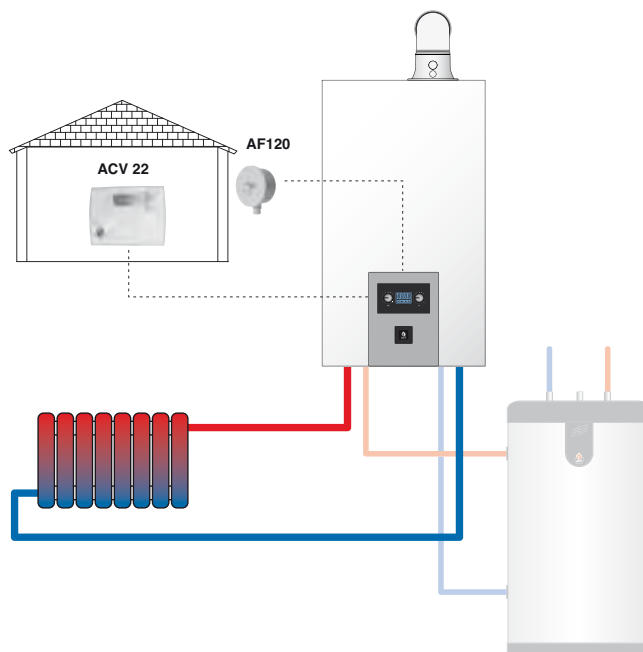
The circulator is triggered as soon as the room thermostat generates a heat demand.

Advantages for the user:

- Comfort
- Maximum output
- Simplicity of the system



- A. - Heating temperature setting guidelines without external sensor
 - Maximum heating temperature limit with external sensor
 - The thermostat is positioned on ☀, the heating circuit is deactivated and the boiler is then in summer mode..
- B. - Domestic hot water temperature setting.
 (Prestige Excellence or as an option with an external domestic hot water tank).







Before the boiler's start up, an **"Auto Set"** is necessary so that the boiler detects the DHW sensor.

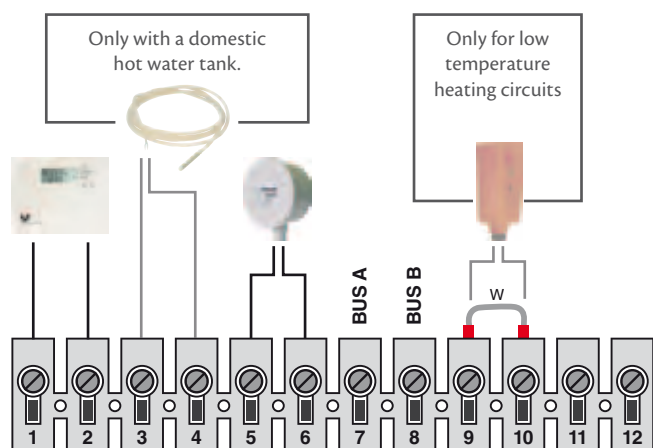
To do this, turn the right button to **"RESET"** then start up the boiler by pressing on the **ON/OFF** switch.

From the time that the display shows **"SET"** the **"RESET"** button can be released.

Optional equipment

	Code	Description
	10800018	ACV 22 Room thermostat
	10510100	Outside temperature sensor, 12 kΩ — AF120
	10510900	Safety thermostat RAM 5109: Compulsory to protect all floor heating circuits.
	5476G003	Sensor NTC 12 kΩ: Monitors the external domestic hot water tank.

INSTALLATION



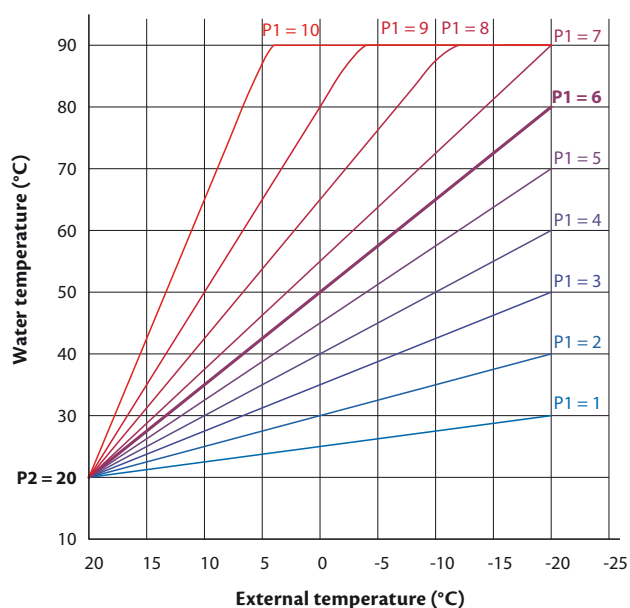
It is compulsory to install a safety thermostat on the low temperature heating circuit outlet.



Factory Description

P 01	6	Selection of the heating curve
P 02	20	Minimum temperature of the heating outlet
P 05	10	T plus = temperature increase of primary flow during domestic hot water mode
P 06	0	0 = domestic hot water priority mode 1 = in parallel

Heating curve

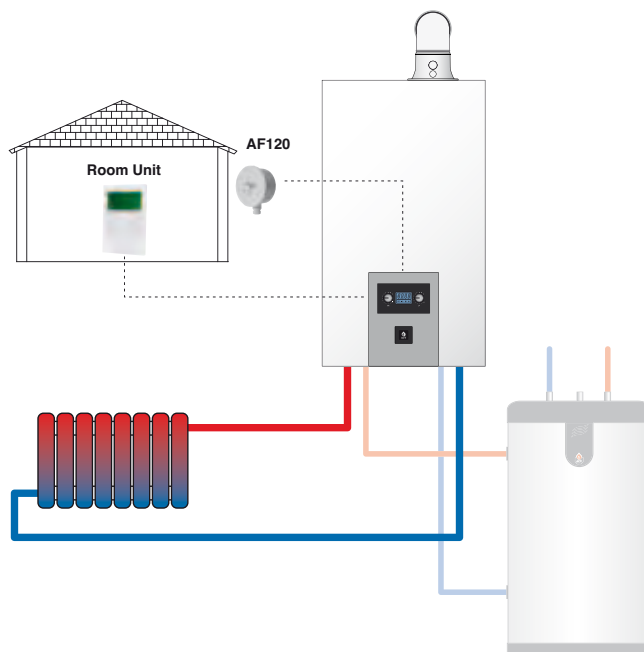


INSTALLING A SINGLE HEATING CIRCUIT WITH ROOM UNIT REGULATION

SCHEMATIC DIAGRAM

A Room Unit thermostat controls the heating (radiators or floor heating). The latter enables a choice between different heating functions and authorises up to 3 daily programmes for heating and for domestic hot water. The Room Unit thermostat has the advantage of displaying information on system status.

In this configuration, the boiler continuously adapts its operation to the outside temperature.



- A. - Heating temperature setting guidelines without external sensor
- Maximum heating temperature limit with external sensor
- The thermostat is positioned on , the heating circuit is deactivated and the boiler is then in summer mode..
- B. - Domestic hot water temperature setting.
(Prestige Excellence or as an option with an external domestic hot water tank).



When connected with a "Room Unit", the two knobs (A) and (B) have no action on the boiler, except for the "RESET" function.






Before the boiler's start up, an "Auto Set" is necessary so that the boiler detects the DHW sensor.

To do this, turn the right button to "RESET" then start up the boiler by pressing on the ON/OFF switch.

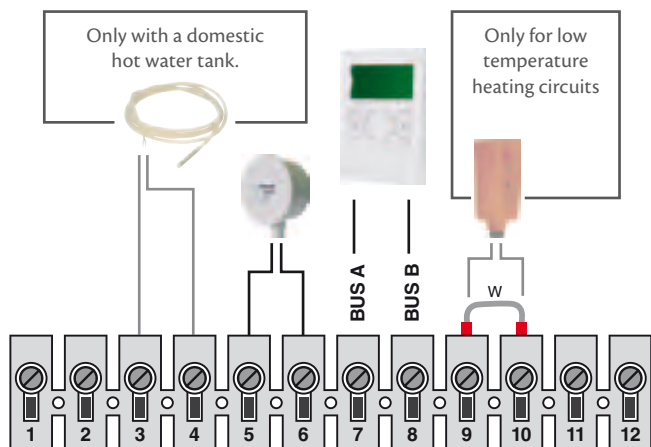
From the time that the display shows "SET" the "RESET" button can be released.

For more information, consult the Room Unit instructions

Optional equipment

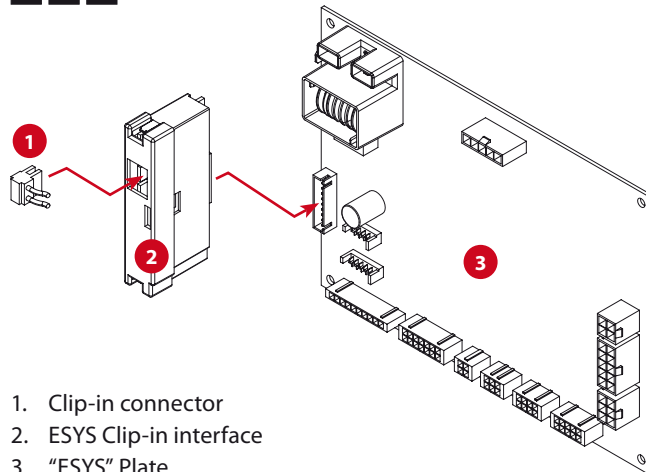
	Code	Description
	10800189	RSC Room Unit: Delivered with outdoor sensor
	10510100	Outside temperature sensor, 12 kΩ — AF120
	10510900	Safety thermostat RAM 5109: Compulsory to protect all floor heating circuits.
	10800201	ESYS clip-in interface: Authorises communication between the boiler and the RSC Room Unit.
	5476G003	Sensor NTC 12 kΩ: Monitors the external domestic hot water tank.

INSTALLATION



It is compulsory to install a low temperature heating circuit outlet safety thermostat.

Interface address "0"



Factory

Description

P 05

10

T plus = temperature increase of primary flow during domestic hot water mode

P 06

0

0 = domestic hot water priority mode
1 = in parallel

INSTALLATION OF A HIGH AND LOW TEMPERATURE HEATING CIRCUITS REGULATED BY THE ROOM UNIT + ZMC-2 OF 230 VOLTS

SCHEMATIC DIAGRAM

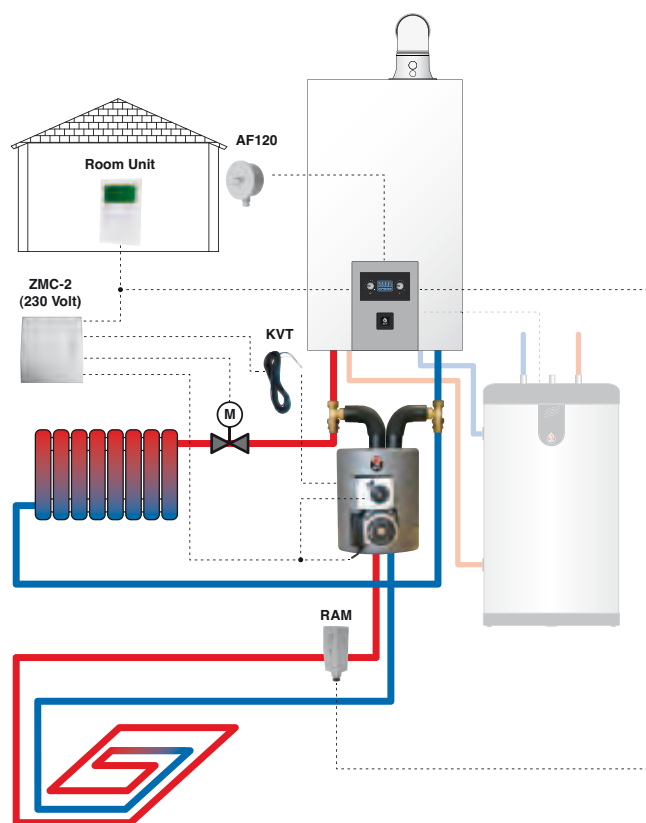
This constitutes a simple way to control 2 heating circuits whose mixed circuit power is limited to 14 kW.

This configuration is ideal for a basic system of floor heating with supplementary heating provided by radiators.

The Room Unit allows for control of the two different circuits according to climatic conditions, selection among different heating functions and authorization of up to 3 weekly schedules for the heating and DHW.

Before the boiler's start up, an "Auto Set" is necessary so that the boiler detects the DHW sensor.
To do this, turn the right button to "RESET" then start up the boiler by pressing on the ON/OFF switch.
From the time that the display shows "SET" the "RESET" button can be released.

For more information, consult the Room Unit instructions



Optional equipment









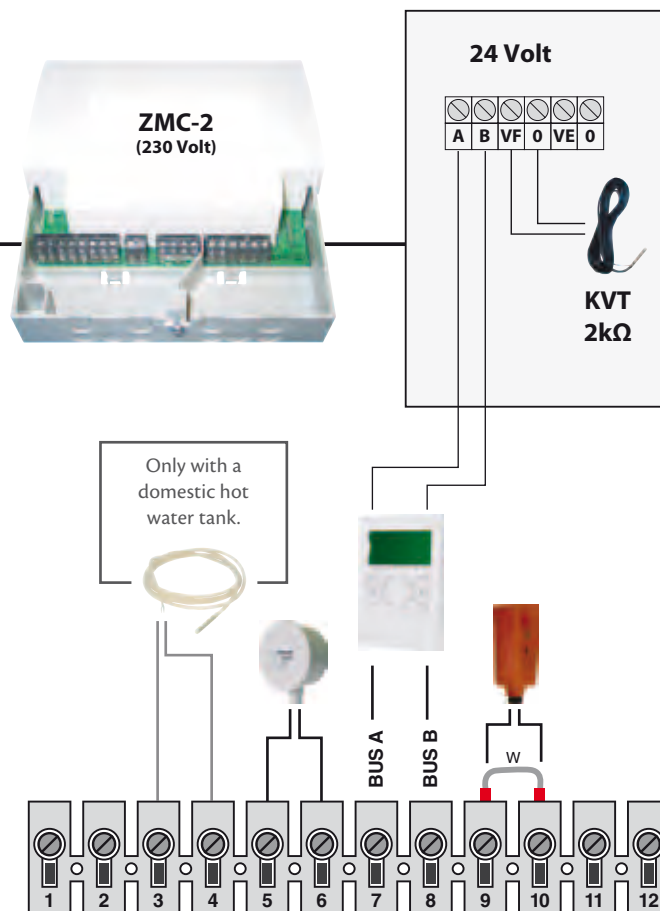
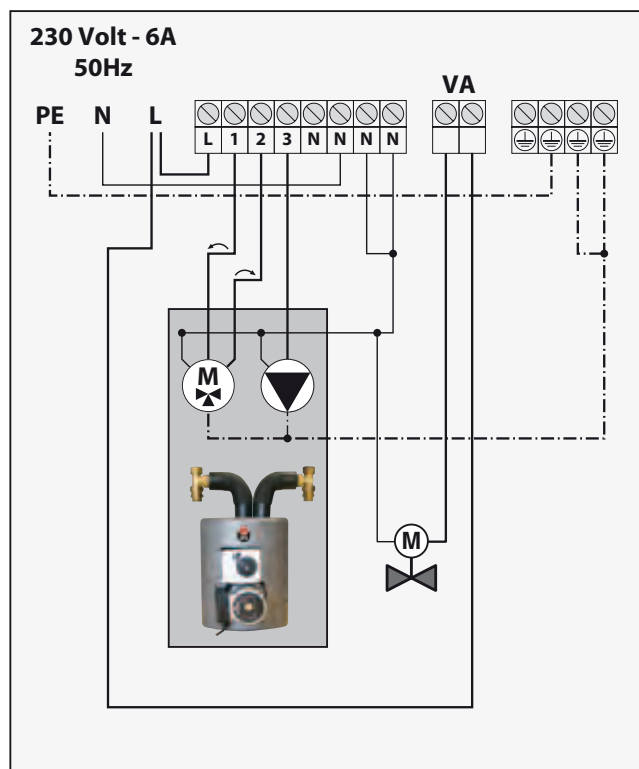
	Code	Description
	10800189	RSC Room Unit: Delivered with outdoor sensor.
	10800218	Module ZMC-2 230 Volt (kit): Manages the second heating circuit - alarm contact - only functions in conjunction with the Room Unit RSC.
	10510100	Outside temperature sensor, 12 kΩ — AF120
	10800201	ESYS clip-in interface: Enables communication between the boiler and the Room Unit RSC.
	10800226	Basic low temperature kit — BT 14: The direct circuit is fed by the boiler's internal circulator, whereas The low temperature circuit (maximum 14 kW) is fed by the BT 14 kit. Drywell pocket for flow sensor included.
	10800044	KVT 2 kΩ drywell sensor: Control of the regulated circuit.
	10510900	Safety thermostat RAM 5109: Compulsory to protect all floor heating circuits.
	5476G003	Sensor NTC 12 kΩ: Monitors the external domestic hot water tank.

Diagram for wiring in compliance with applicable standards.

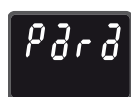


Hydraulic: P6 = 23

NC = high temperature circuit normally closed.



It is compulsory to install a safety thermostat on the low temperature heating circuit outlet.



Factory Description

P 05

10

T plus = temperature increase of primary flow during domestic hot water mode

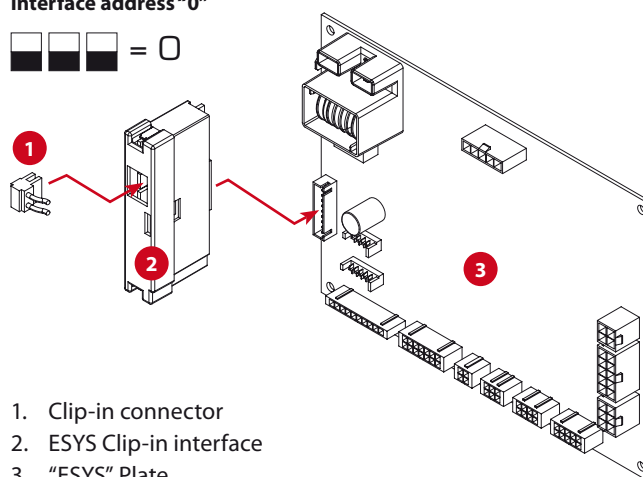
P 06

0

0 = domestic hot water priority mode
1 = in parallel

Interface address "0"

□ □ □ = 0



1. Clip-in connector
2. ESYS Clip-in interface
3. "ESYS" Plate

PROPANE CONVERSION

As indicated on the data plate, the boiler is factory preset to operate with G20 gas, G25 gas, G30 gas or G31 gas.

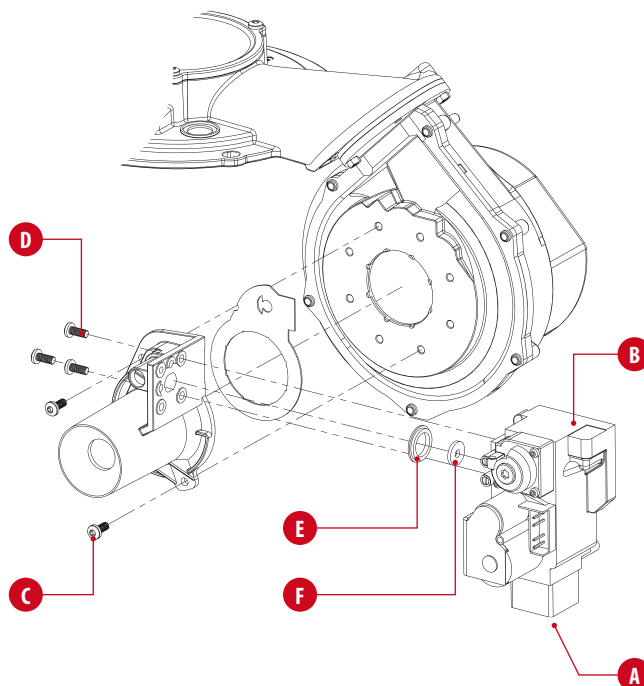
To convert the boiler to another type of gas, it is necessary to:

- change the orifice
- adjust the CO₂
- adjust the parameters as indicated in the chart below.

The CO₂ parameters to be set are indicated in the technical data table.

CHANGING THE ORIFICE:

1. Turn off the gas and electric power supplies.
2. Unscrew the gas pipe coupling (A) below the valve.
3. Unplug the gas valve (B).
4. Dismantle the gas valve-venturi assembly (C).
5. Remove the gas valve from the venturi (D) and change the orifice (F).



Important: position the orifice seal(s) correctly (E).

6. Reassemble the gas valve-venturi assembly, following the same procedure in reverse order.
7. Stick the yellow (617G0152) "Propane" self adhesive sticker on the gas valve (B).



The conversion of natural gas to propane or the reverse is not authorized in certain countries such as Belgium. Refer to the gas categories chart.



Before carrying out the CO₂ setting, it is important to modify the fan speed parameters as indicated in the table below.

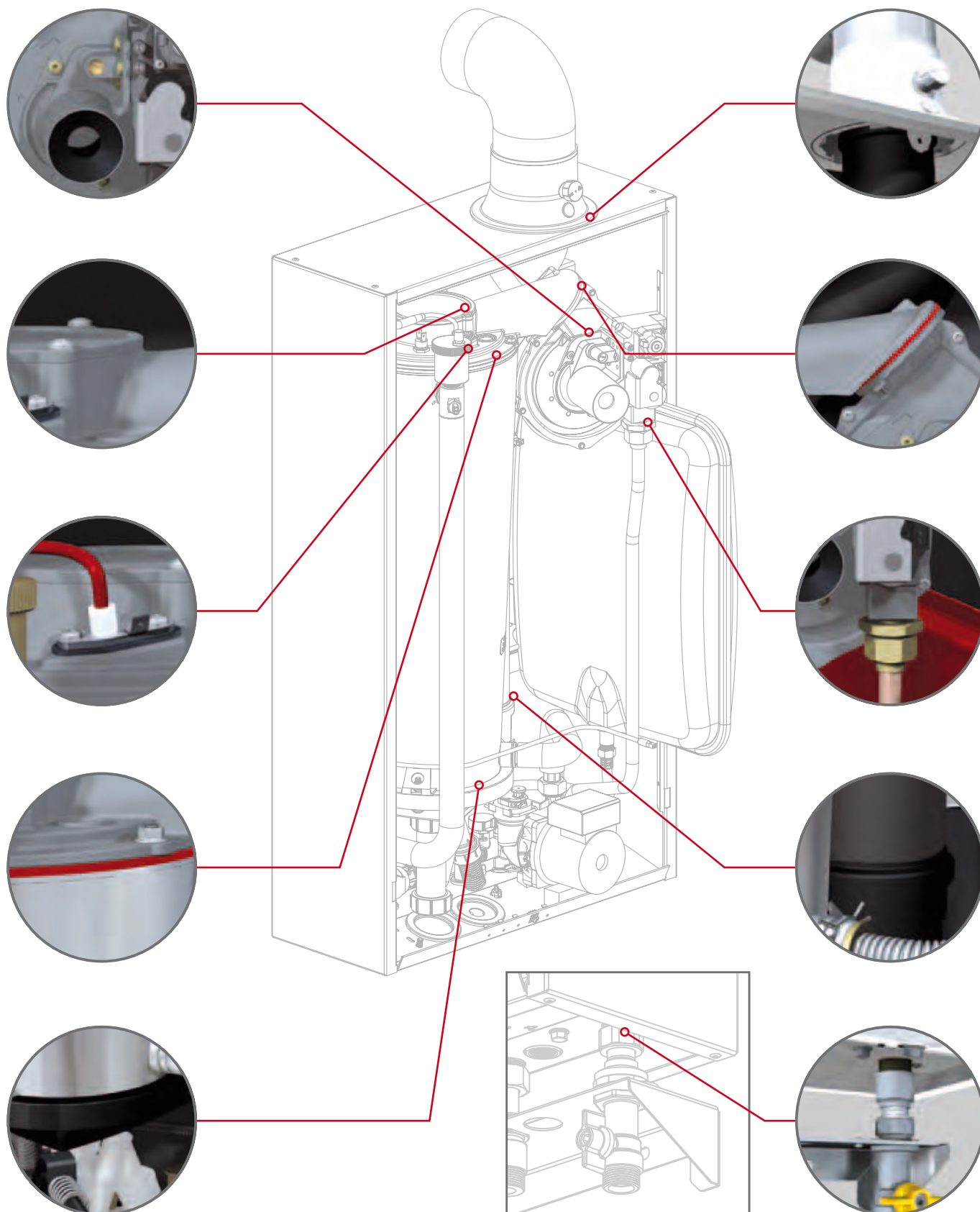
Cover plate

	Prestige 18	Prestige 32
G20	5.2	—
G25	5.2	—
G30	3.4	5.2
G31	3.4	5.2

		Prestige 18		Prestige 32	
Setting with front panel closed		G20 - G25	G30 - G31	G20 - G25	G30 - G31
Boiler's maximum power	% CO ₂	8.9	10.5	8.9	10.5
Maximum fan speed	rpm	6000	5700	6250	6200
Boiler's minimum power	% CO ₂	8.6	10.2	8.6	10
Minimum fan speed	rpm	1100	1500	1100	1500
P 03 = Minimum load	%	0	8	0	8
P 04 = Maximum load (central heating)	%	100	94	100	100
Setting with front panel open					
Boiler's maximum power	% CO ₂	8.7	10.3	8.7	10.3
Boiler's minimum power	% CO ₂	8.4	10	8.4	9.8



After working on the boiler, check that the connections are gas tight during operation.
[See control zones below]



COMMISSIONING THE SYSTEM

FILLING THE DHW CIRCUIT

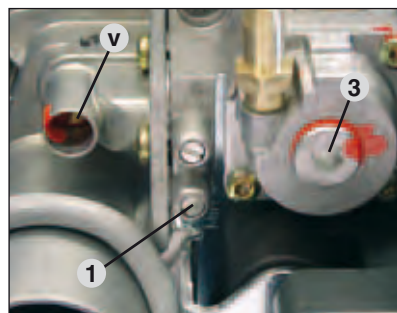
- In the event of installation with a DHW cylinder, fill the cylinder slowly and vent it by opening the hot water tap.
- Vent all of the taps and check for any leaks in the domestic hot water circuit.

FILLING THE HEATING CIRCUIT

- Before filling the boiler's heating circuit, switch the appliance on and wait until the display shows the "E 47" error code indicating that the boiler has insufficient water pressure, then switch the appliance off. This enables the 3-way valve to get into mid position to allow filling of the heating circuit.
- Fill all of the heating circuit up to a minimum of 1.5 Bar using the filling loop for your system. The filling phase must take place slowly to allow proper venting of the system through the automatic air vent.
- If your system is equipped with a hot water tank, vent the tank's primary circuit with the help of the manual vent valve positioned on the top of the tank.
- Check for any leaks in the heating circuit.

GAS SUPPLY AND CO₂ ADJUSTMENT

- Open the gas isolation valve, vent the pipe and check for any possible gas leaks.
- Check that the condensate trap ball is present.
- Switch the boiler on using the ON/OFF switch. If the boiler does not start up, check the boiler's heat and/or room thermostat settings, increase the temperature if necessary.
- Check the gas pressure (see diagram below ref. 1) and leave the boiler to heat for a few minutes.



REF. 3:
The OFFSET adjustment
of the gas valve is factory
preset and sealed.
It cannot be modified.

- Set the boiler to high power mode and check the CO₂ using the technical characteristics chart. Next, set the boiler to minimum power mode and check the CO₂ using the same chart.
- Set the central heating and hot water temperatures according to the values indicated in the instructions for use.
- Bleed the central heating system again, and if necessary, fill to reach the desired pressure:
- Make sure that the heating circuit is properly balanced, and, if necessary, adjust the valves to obtain the correct flow rate for all circuits or radiators.

CHECKING THE SETTINGS

- Check if the parameters are set to meet the user's needs.
- Checking the boiler's settings: only a trained ACV installer or the ACV maintenance department can perform this task.
- Set the appliance to maximum power (see ESYS instructions for installer).
- Check the dynamic gas pressure on the gas valve (see diagram below, ref.1). This must be at least 18 mbars. Let the appliance heat for a few minutes to a minimum temperature of 60 °C. Check the CO₂ setting of the appliance using a flue gas analyser. The optimum value is indicated in the technical characteristics chart. To increase the CO₂ value, turn the venturi screw counter-clockwise. Turn it clockwise to decrease this value (see diagram below, ref. 2). Then put the appliance in minimum power mode (see ESYS instructions for the installer). Let the appliance stabilize for a few minutes. Check the CO₂ value. It should be either equal to the value at full power or a maximum of 0.5 % less than it. If you observe a significant deviation, please contact ACV's maintenance department.

BOILER MAINTENANCE



ACV recommends that you have your boiler inspected, and cleaned, if necessary, at least once a year.

Isolate the appliance before undertaking any work on it, even if you are simply taking measurements and making adjustments.

- Check that the condensate trap is not clogged, fill it as required and check for leaks.
- Check that the safety valves are in good working order.
- Vent the whole system and refill the appliance if needed until it reaches 1.5 Bar.



In the case of repeated fills, contact your installer.

- Check the boiler's combustion in maximum power mode. If this value is very different from the original setting it may indicate an obstruction in the air intake ducts or flue gas exhaust pipes, or that the exchanger is clogged.

RESISTANCE OF THE TEMPERATURE SENSORS

T° [°C]	R Ω	T° [°C]	R Ω	T° [°C]	R Ω
- 20	98200	25	12000	70	2340
- 15	75900	30	9800	75	1940
- 10	58800	35	8050	80	1710
- 5	45900	40	6650	85	1470
0	36100	45	5520	90	1260
5	28600	50	4610	95	1100
10	22800	55	3860	100	950
15	18300	60	3250		
20	14700	65	2750		

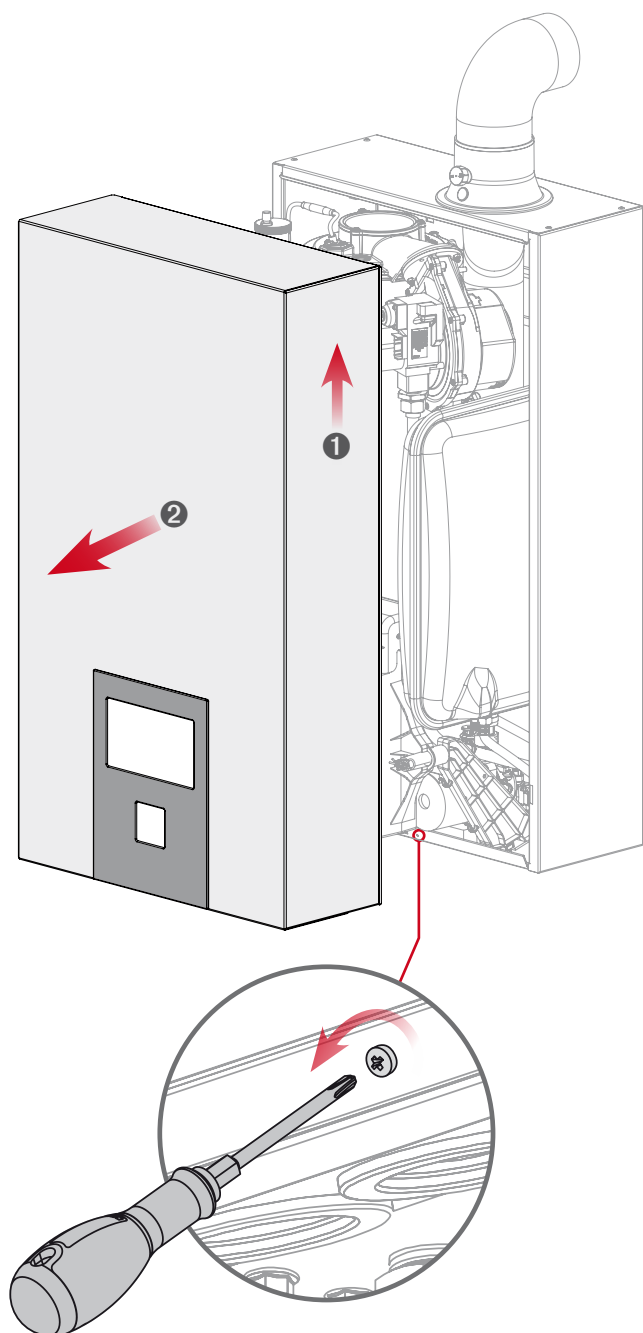


Specific regulation in Belgium:
The CO₂, gas flow, air flow and air/gas supply parameters are factory preset and cannot be changed in Belgium.



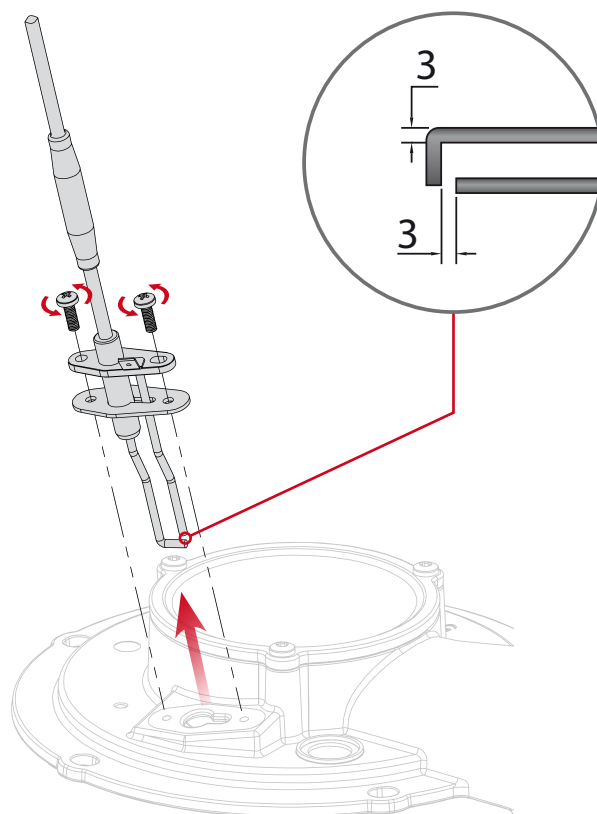
Before carrying out any work on the boiler, it is important to isolate the electrical supply from the unit.

FRONT PANEL REMOVAL



DISASSEMBLING AND INSPECTING THE ELECTRODE

1. Open the boiler's front panel (see opposite).
2. Remove the earth lead connection.
3. Unscrew the two retaining screws.
3. Check the condition of the electrode and the seal, replace if necessary, before reassembling the electrode by following the above procedure in reverse order.

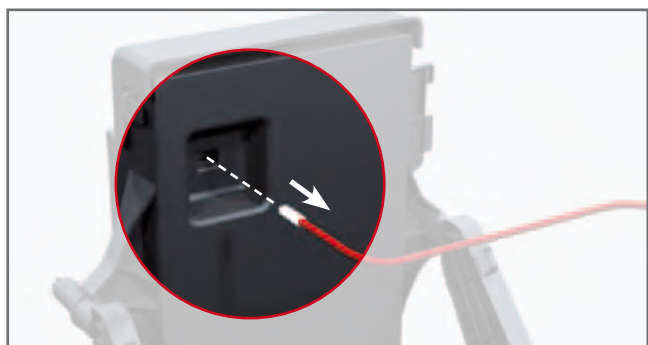


DISMANTLING THE BURNER

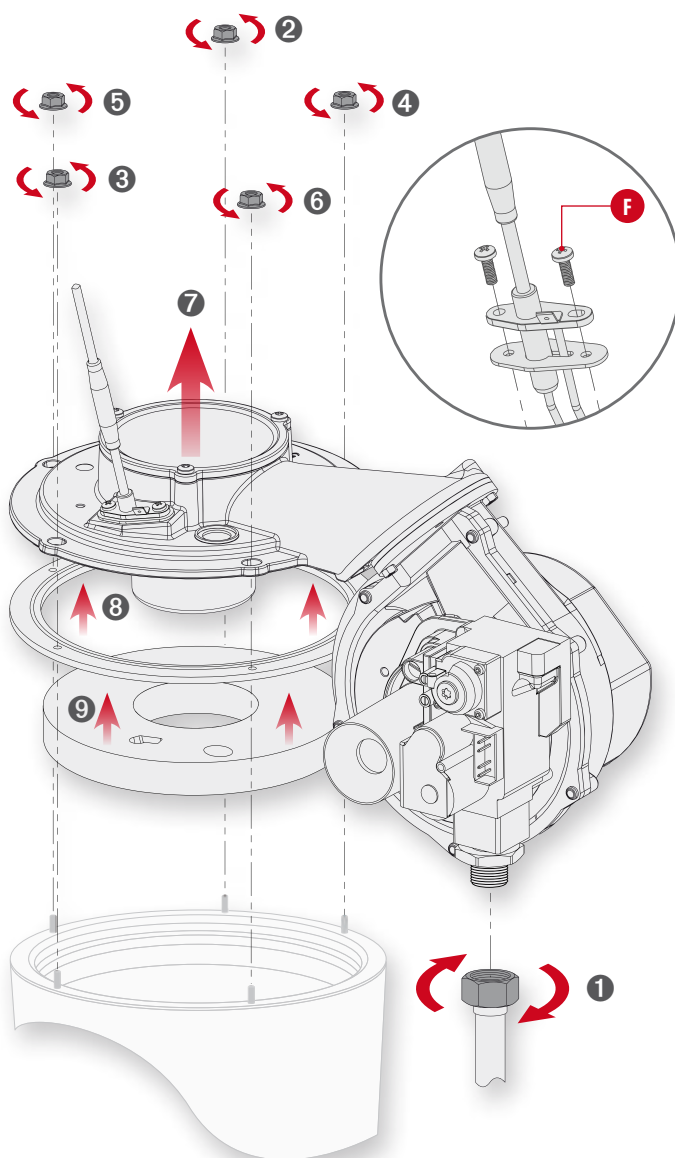


Shut off the gas supply before dismantling the burner.

1. Open the boiler's front panel.
2. Disconnect the PWM jack plug and the fan's 230 Volt plug.
3. Disconnect the gas valve's jack plug.
4. Disconnect the ignition and ionisation cable from the "ESYS" rear panel, see diagram below.

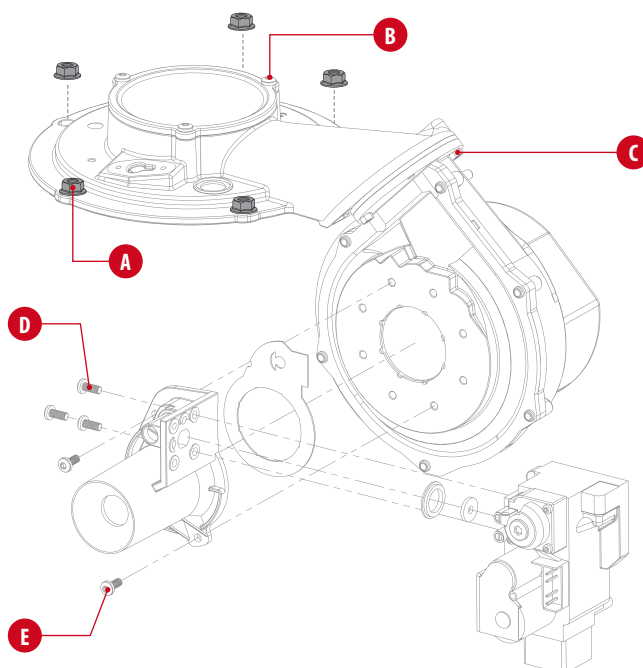
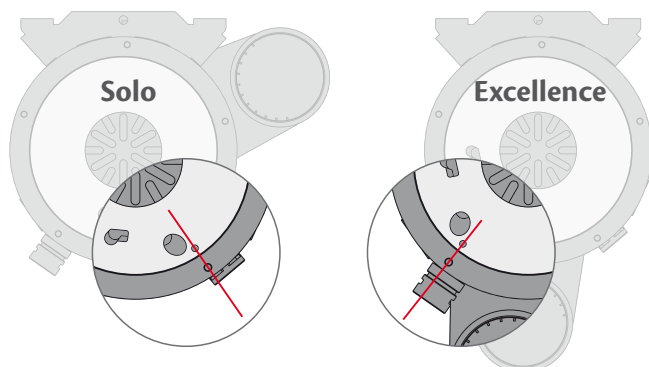


5. Unscrew the $\varnothing 3/4"$ [F] ① gas coupling.
6. Unscrew the 5 nuts of the burner using a socket and ratchet; follow the order of the diagram opposite to make the disassembly easier.
7. Carefully lift up the complete burner ⑦ with the gas valve-venturi taking care not to damage the insulation brick ⑨ and remove it from the exchanger.
8. Check and replace the insulation brick ⑨ if necessary and the seal ⑧ before re-assembling the burner by following the above procedure in reverse order.



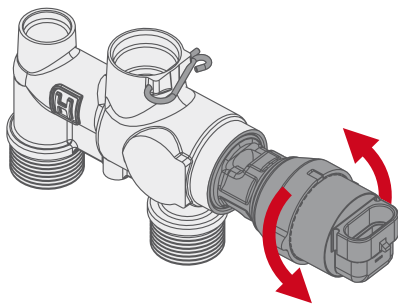
BURNER THREAD TORQUE CHART

Description	Thread torque (Nm)	
	Min.	Max
A = Burner flange nuts (5 nuts)	5	6
B = Burner tube screws (3 screws)	3	3.5
C = Fan nuts (3 nuts)	3	3.5
D = Gas valve screw (3 screws)	3.5	4
E = Venturi screws (2 screws)	3.5	4
F = Electrode screws (2 screws)	3	3.5

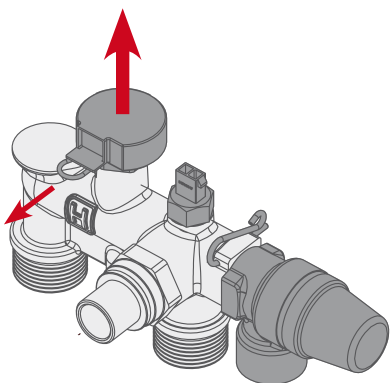


DISMANTLING ACCESSORIES

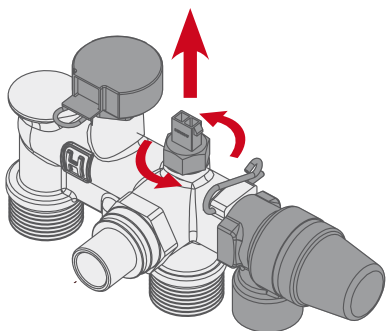
DIVERTING VALVE MOTOR (STEPPER)



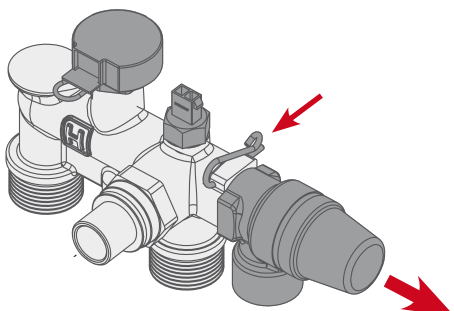
PRESSURE SENSOR



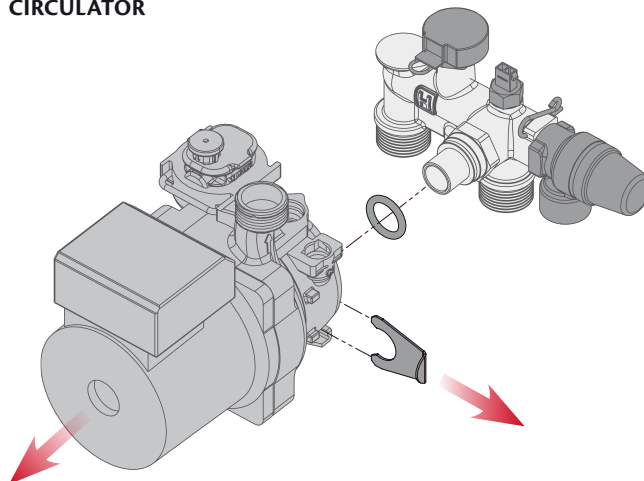
NTC2 HEATING RETURN TEMPERATURE SENSOR



HEATING SAFETY VALVE

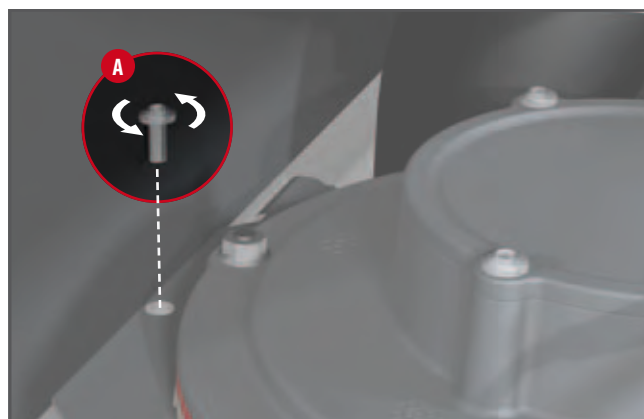


CIRCULATOR



DISMANTLING THE EXCHANGER

- Drain the central heating water using a connection below the lower level of the appliance.
- Let the appliance drain completely.
- Unscrew retaining screw "A" from the exchanger.



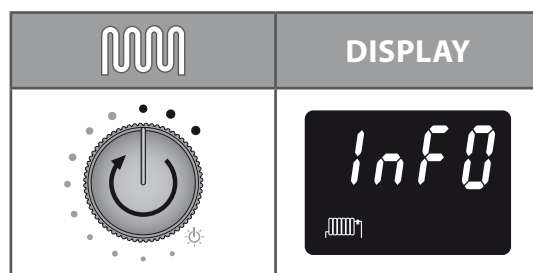
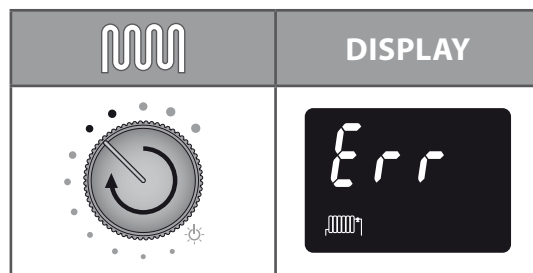
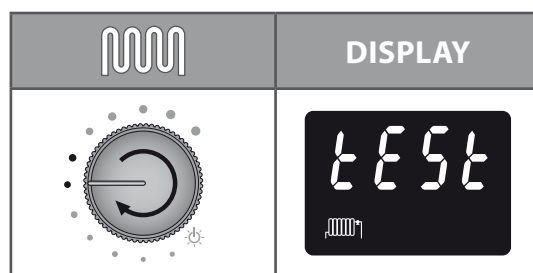
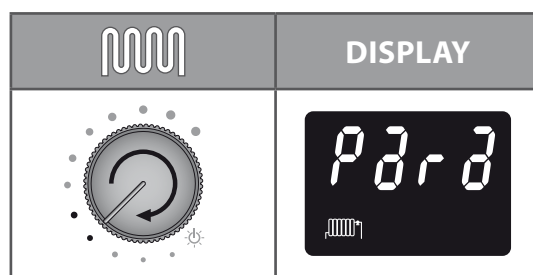
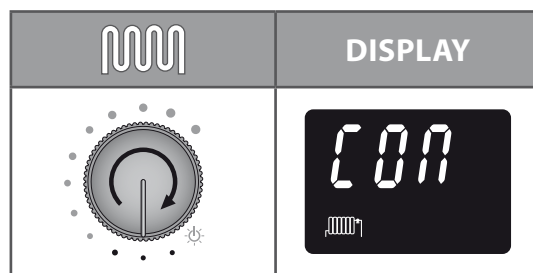
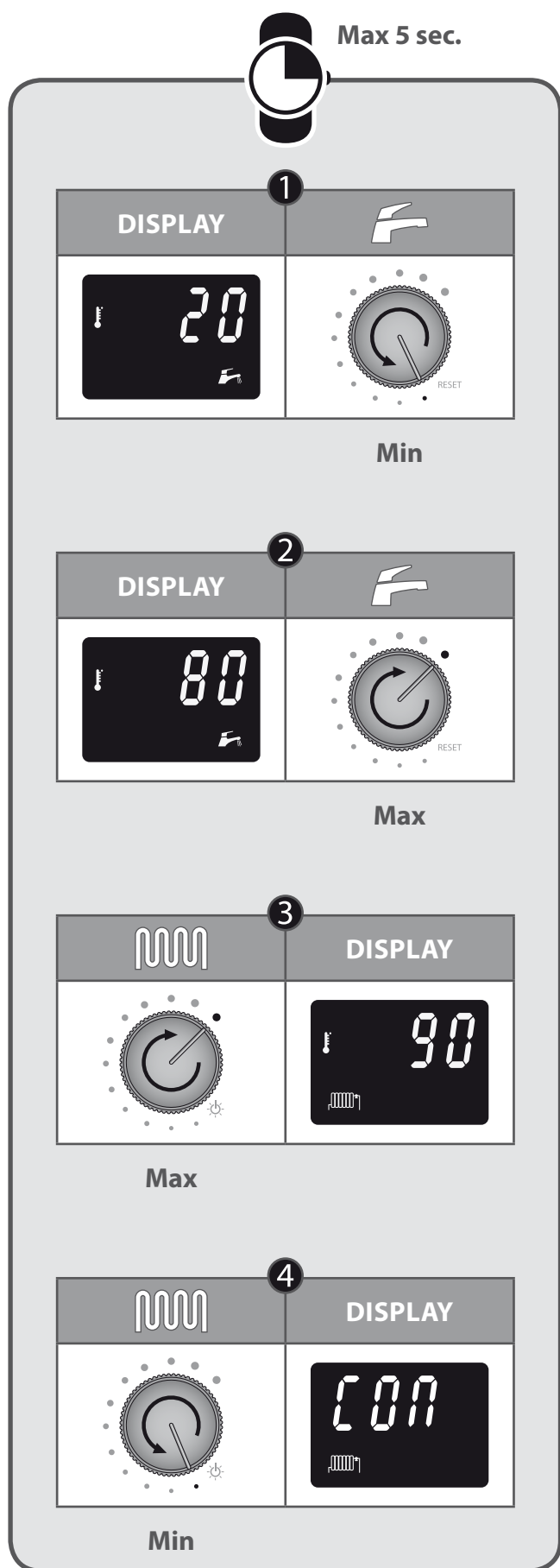
- Dismantle the electric connections from the burner, as well as the NTCs.
- Dismantle the inlet and outlet hydraulic couplings by removing the pins. Use caution while disassembling: residual water may escape from the exchanger.
- Disassemble the condensate trap connection and disassemble the retaining screw situated between the condensate trap and the exchanger.
- Lift the complete exchanger assembly vertically. The exchanger detaches from the retaining bracket and is free to remove.
- Check the condition of the O-Rings and replace them if necessary. Reassemble the exchanger using the same procedure in reverse order.

CLEANING THE EXCHANGER

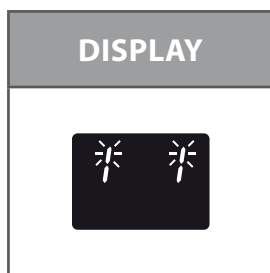
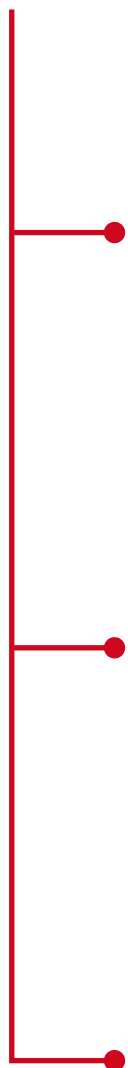
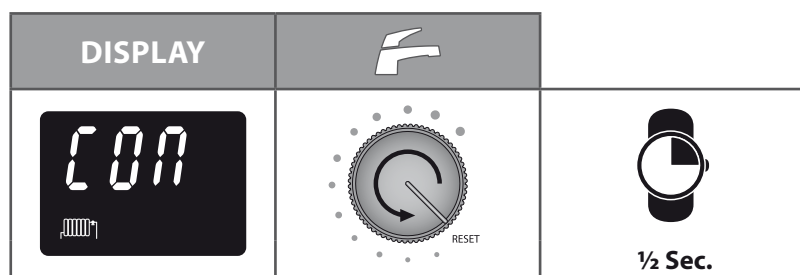
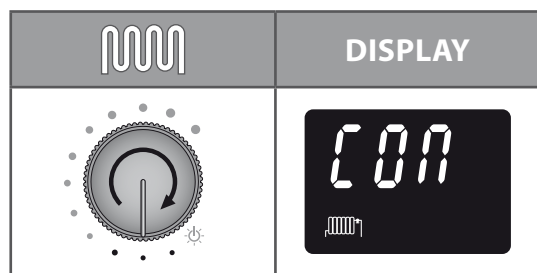
- Dismantle the burner previously described.
- Remove the burner insulation.
- Use a vacuum cleaner to clean out the chamber.
- Disconnect the chimney from the exchanger.
- Check to see if the condensate collector is dirty and clean if necessary.
- Check the burner's insulation and seal. Replace if necessary.
- Check the electrode and replace if necessary.
- Reassemble the burner and check for any leaks.
- Switch the appliance on again. Set to maximum power mode and check for leaks.
- Check the gas pressure and the CO₂ setting as described in the previous section.

ESYS PARAMETERS FOR THE SPECIALIST

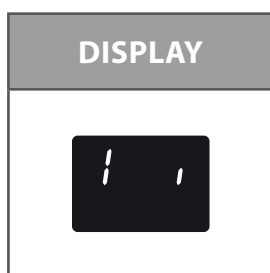
CODE MODE



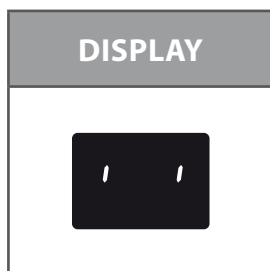
COMMUNICATION MODE



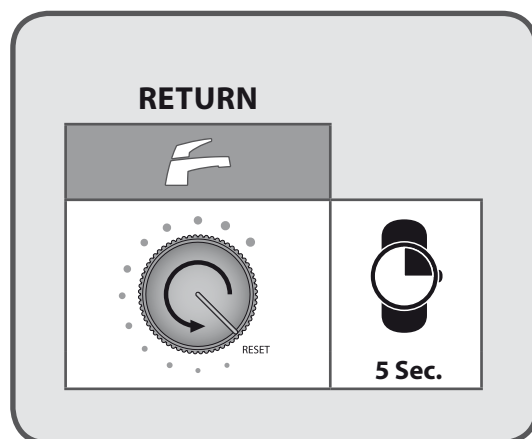
Complete communication



ESYS interface Clip-in
communication only



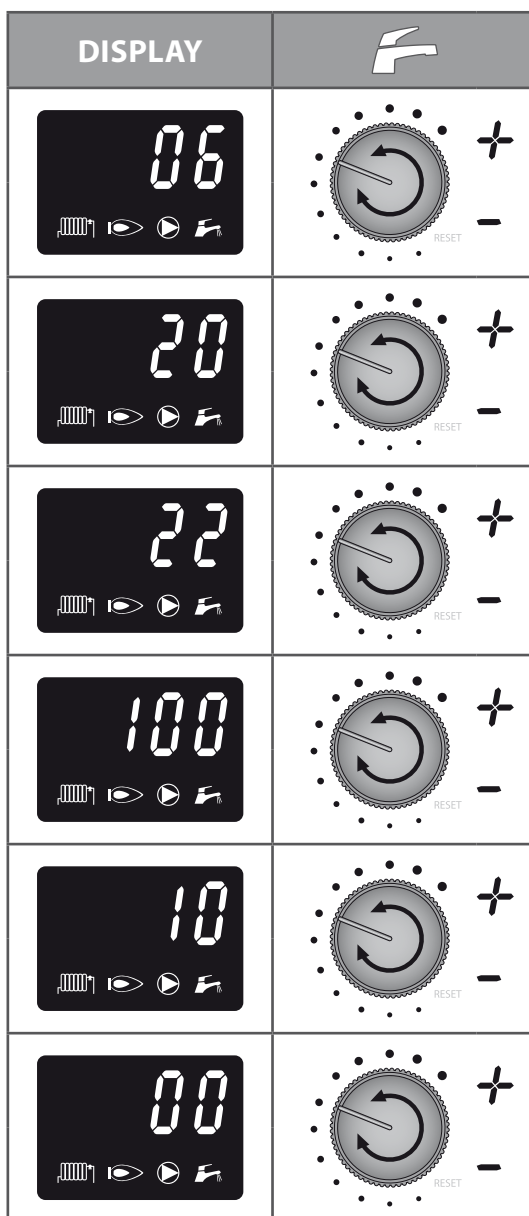
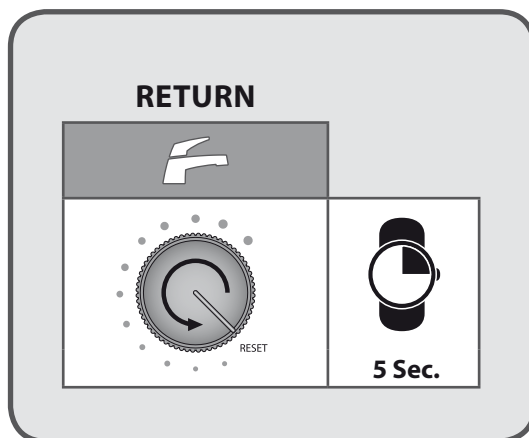
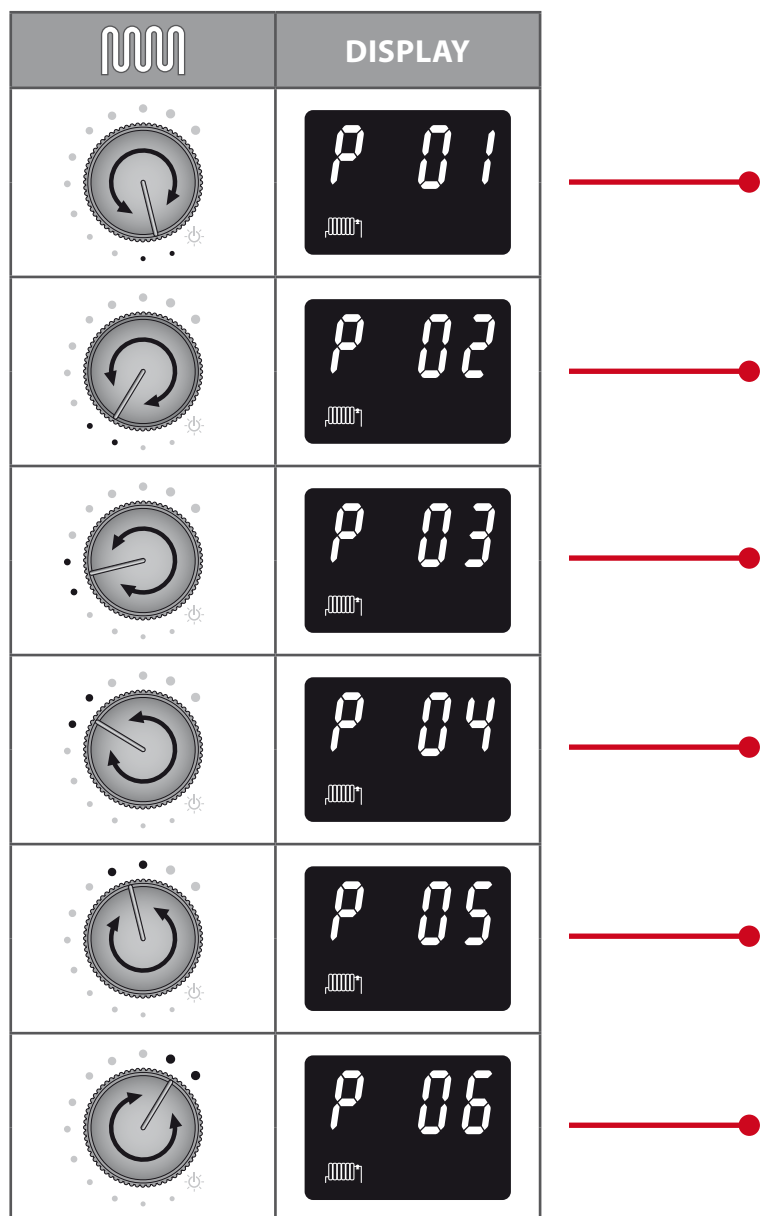
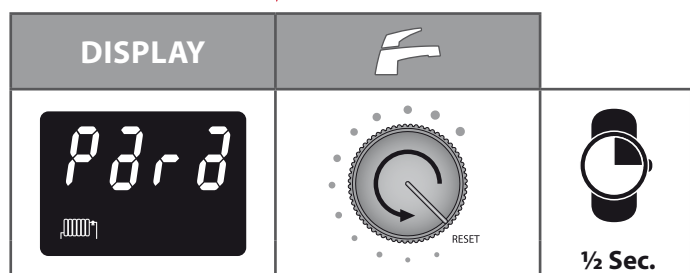
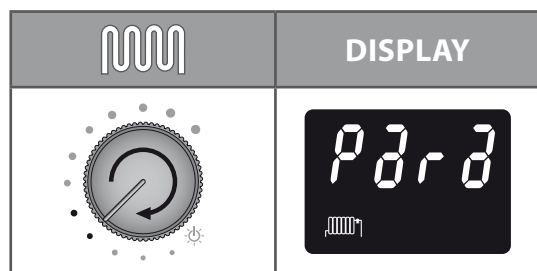
No communication



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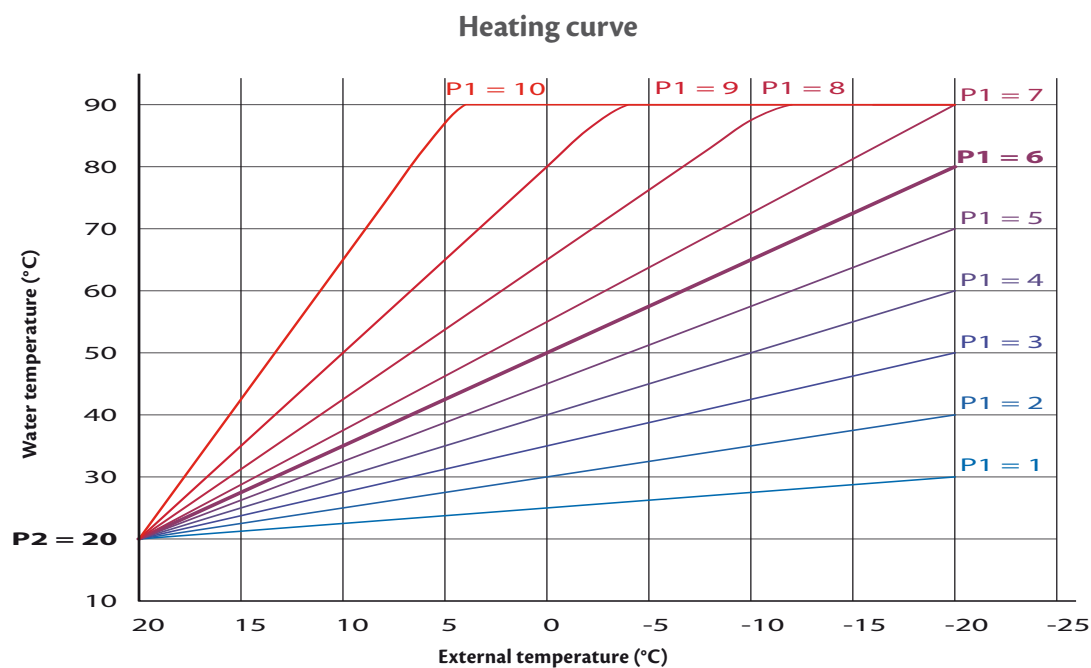
ESYS PARAMETERS FOR THE SPECIALIST

PARAMETER MODE





	FACTORY PARAMETER	RANGE OF PARAMETERS	DESCRIPTION
P01	6	0 - 10	Selection of the heating curve
P02	20	20 - 40	Minimum temperature of the heating outlet
P03	0	0 - 100	Minimum load
P04	100	0 - 100	Maximum load (central heating)
P05	10	5 - 30	T plus = outlet temperature increase during function in domestic hot water mode
P06	0	0 = ON 1 = Parallel	DHW priority

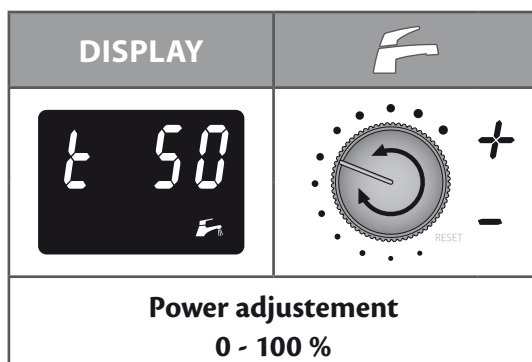
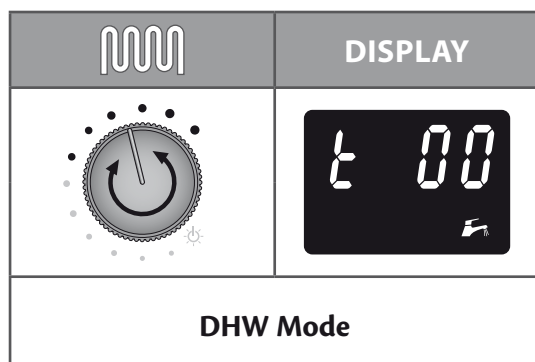
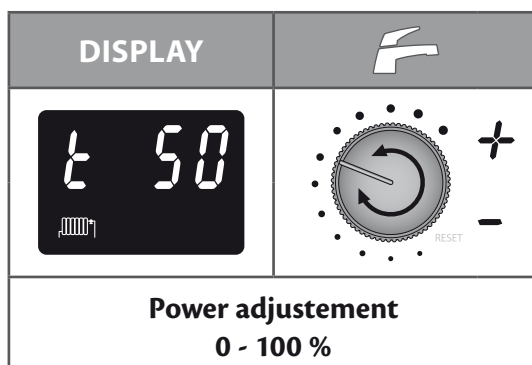
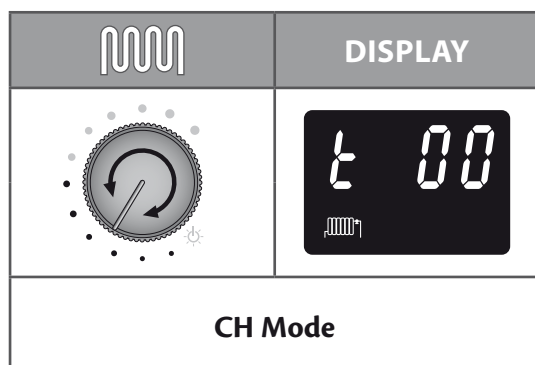
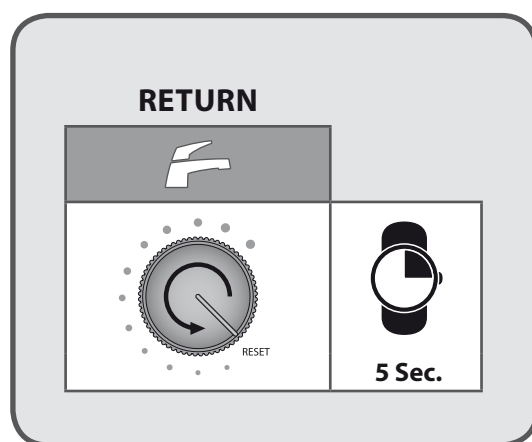
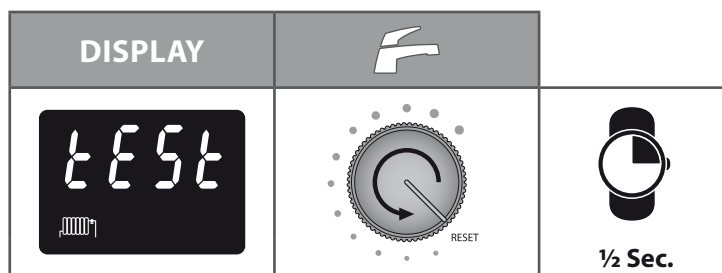
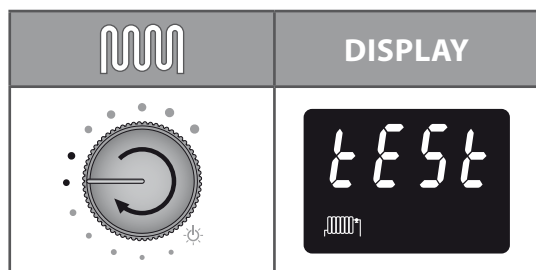


ESYS PARAMETERS FOR THE SPECIALIST

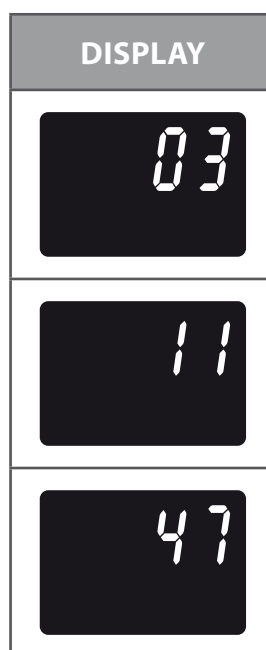
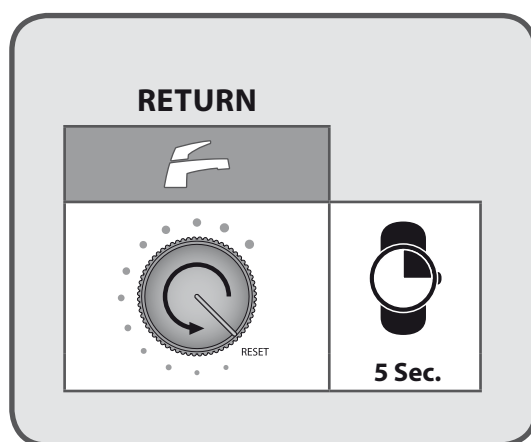
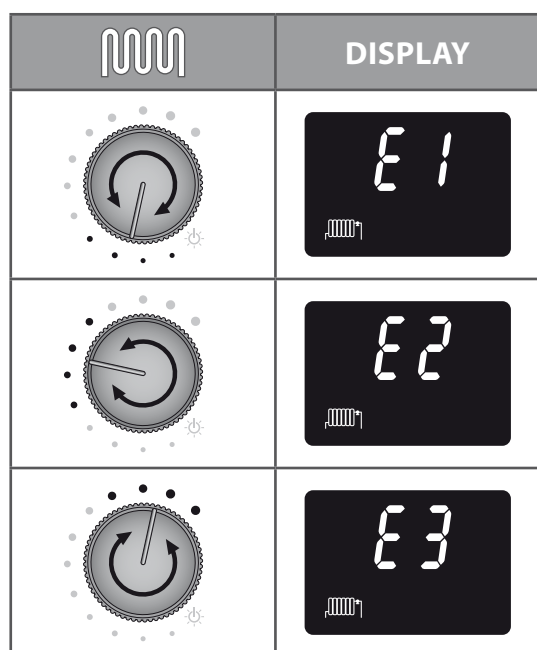
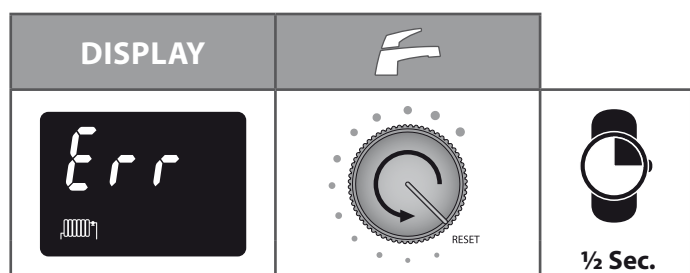
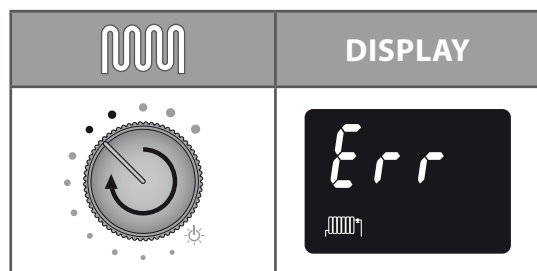
TEST MODE

Manual selection of the input in CH or DHW mode from 0 to 100%.

This mode is used to control combustion settings.



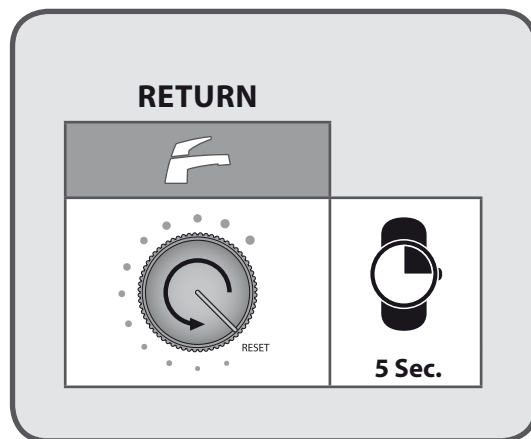
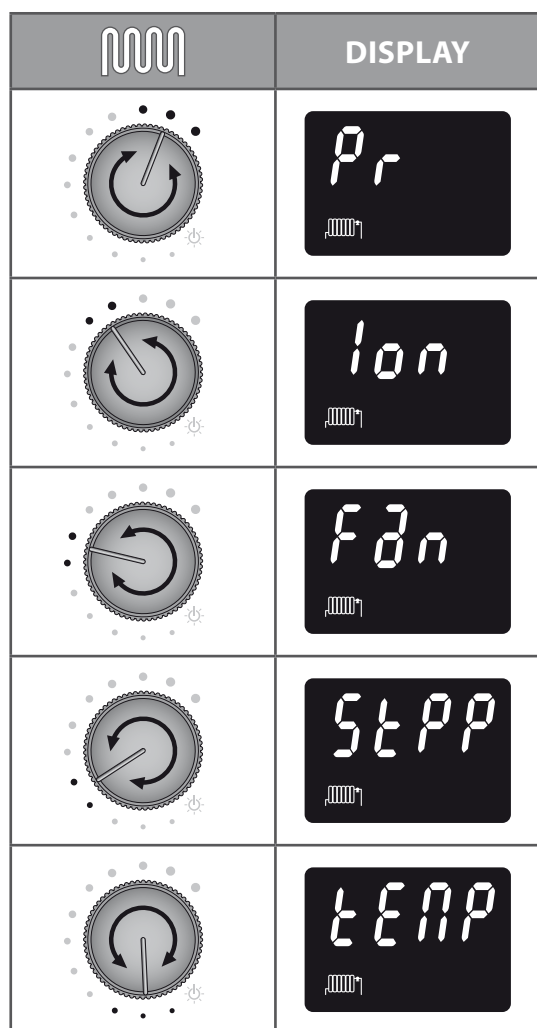
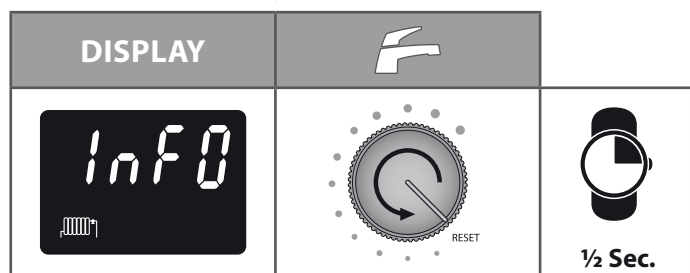
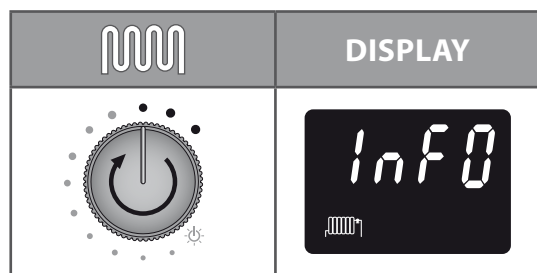
ERROR MODE

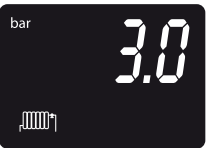
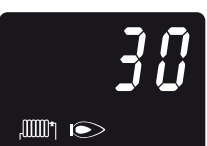




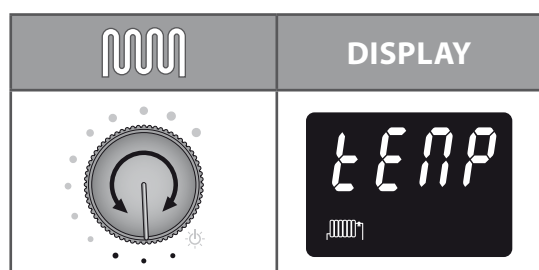
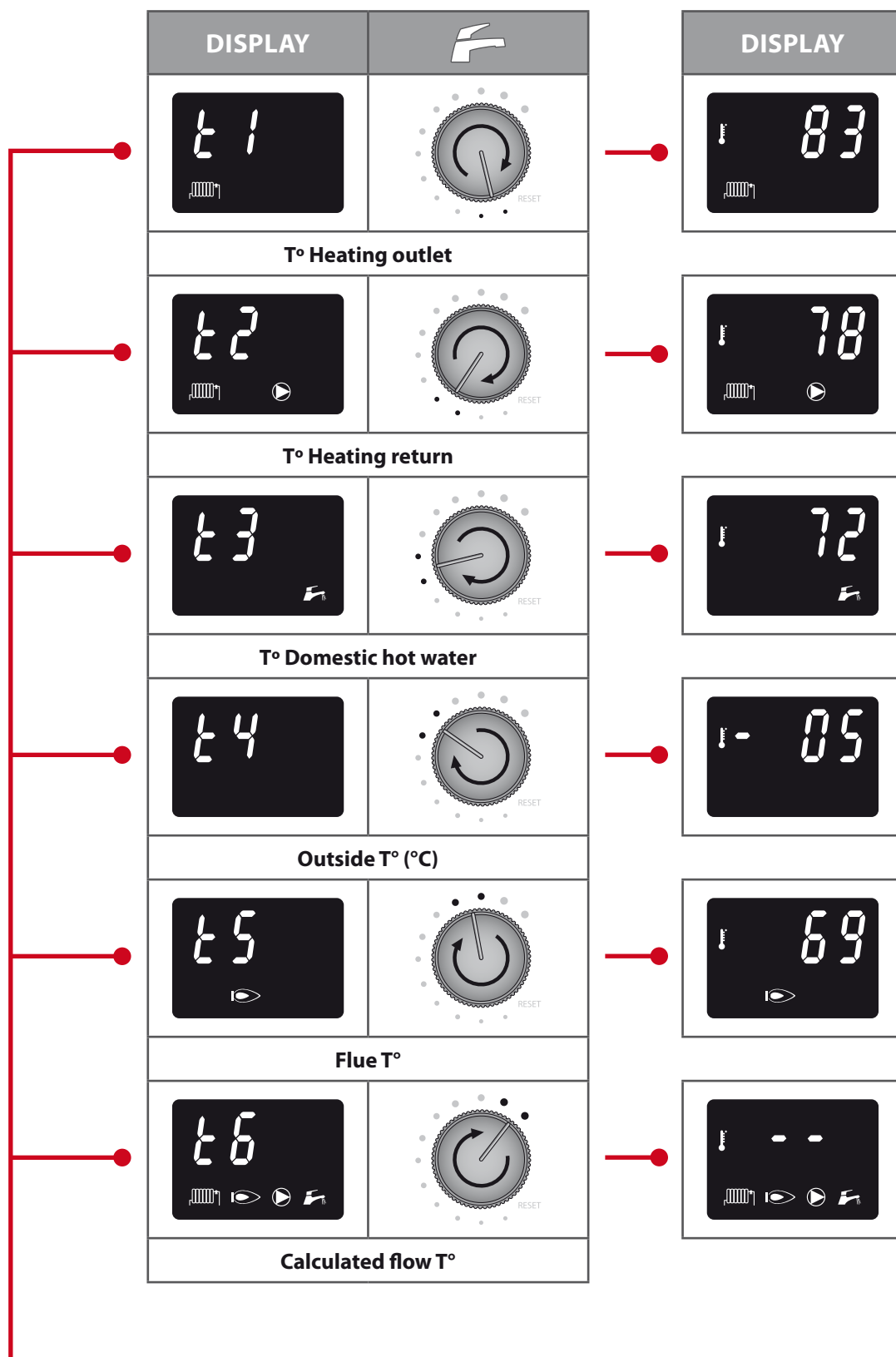
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ESYS PARAMETERS FOR THE SPECIALIST

INFO MODE



DISPLAY	
	bar
	$(30/10) \geq 2,4 \mu A$
	rpm
	0% = CH 100% = DHW



"ESYS" ERRORS AND BLOCKING CODES

LIST OF ERROR CODES + SOLUTIONS [in ERROR mode]



To unlock the system:

- Press "RESET" on the screen.
- If the fault reoccurs, contact your installer.

If a fault occurs during operation, the system locks out and the screen starts to flash.

The first character is an "E" and flashes, the following two characters indicate the code for this fault, see the chart below.

Codes	Description of the fault	Solution for the fault
E 01	No flame presence after five start-up attempts	<ol style="list-style-type: none"> 1. Check the wiring (short circuit in the 24 V wiring) 2. Check the electrode and its position 3. Check the burner gas level
E 02	Abnormal flame signal detected	<ol style="list-style-type: none"> 1. Check the ignition wiring 2. Check the electrode and its position 3. Replace the ESYS (water damage)
E 03	Maximum thermostat open	Check the link across 9-10. Check the thermostat and wiring if fitted.
	T1 or T2 > 110°C	<ol style="list-style-type: none"> 1. Check the NTC wiring and replace it if necessary. 2. If the NTC1 sensor is OK, check if there is water flow in the boiler
E 05	No tachometer signal from the fan	<ol style="list-style-type: none"> 1. Check the PWM connection 2. Check the fan's wiring 3. If the problem persists after two "RESET" attempts, replace the fan, if not, replace the "ESYS" circuit board.
E 07	Flue gas temperature too high (NTC5)	<ol style="list-style-type: none"> 1. Check the connection of the NTC5 sensor 2. Check the wiring of the NTC5 sensor 3. If the problem persists replace the NTC5 sensor
E 08	No flame detection	<ol style="list-style-type: none"> 1. Check the electrode gap 2. Check the electrode resistance [1kΩ]
E 09	Gas valve relay error	If the problem persists after two "RESET" attempts, Replace the "ESYS" circuit board if necessary
E 11	Crack of sensor NTC1 or NTC2	Check the sensor NTC1 and NTC2
E 13	Remote "RESET" error	<ol style="list-style-type: none"> 1. Do a local "RESET" on the boiler. 2. If the problem persists replace the "ESYS" circuit board
E 21	ADC error	"RESET" the system or Replace the "ESYS" circuit board if necessary
E 25	CRC Error	"RESET" the system or replace the "ESYS" circuit board if necessary
E 30	Short circuit NTC1	<ol style="list-style-type: none"> 1. Check the connection of the NTC1 sensor 2. Check the wiring of the NTC1 sensor 3. If the problem persists replace the NTC1 sensor
E 31	NTC1 open circuit	<ol style="list-style-type: none"> 1. Check the connection of the NTC1 sensor 2. Check the wiring of the NTC1 sensor 3. If the problem persists replace the NTC1 sensor
E 32	Short circuit NTC3	<ol style="list-style-type: none"> 1. Check the connection of the NTC3 sensor 2. Check the wiring of the NTC3 sensor 3. If the problem persists replace the NTC3 sensor
E 33	NTC3 open circuit	<ol style="list-style-type: none"> 1. Check the connection of the NTC3 sensor 2. Check the wiring of the NTC3 sensor 3. If the problem persists replace the NTC3 sensor
E 34	Deviation of the mains frequency > 1.5 Hz	Check the mains frequency
E 37	Water pressure	Check the water pressure
E 41	No communication from the water pressure sensor	Check the water pressure sensor and replace if necessary

"ESYS" ERRORS AND BLOCKING CODES

Codes	Description of the fault	Solution for the fault
E 43	Short circuit NTC2	<ol style="list-style-type: none"> 1. Check the connection of the NTC2 sensor 2. Check the wiring of the NTC2 sensor 3. If the problem persists replace the NTC2 sensor
E 44	NTC2 open circuit	<ol style="list-style-type: none"> 1. Check the connection of the NTC2 sensor 2. Check the wiring of the NTC2 sensor 3. If the problem persists replace the NTC2 sensor
E 45	Short circuit NTC5	<ol style="list-style-type: none"> 1. Check the connection of the NTC5 sensor 2. Check the wiring of the NTC5 sensor 3. If the problem persists replace the NTC5 sensor
E 46	NTC5 open circuit	<ol style="list-style-type: none"> 1. Check the connection of the NTC5 sensor 2. Check the wiring of the NTC5 sensor 3. If the problem persists replace the NTC5 sensor
E 47	Open or defective water pressure sensor	Check the water pressure sensor and replace if necessary
NTC	Maximal difference T1 - T2 exceeded	Check the water flow rate



Handwriting practice lines consisting of 20 horizontal dotted lines.